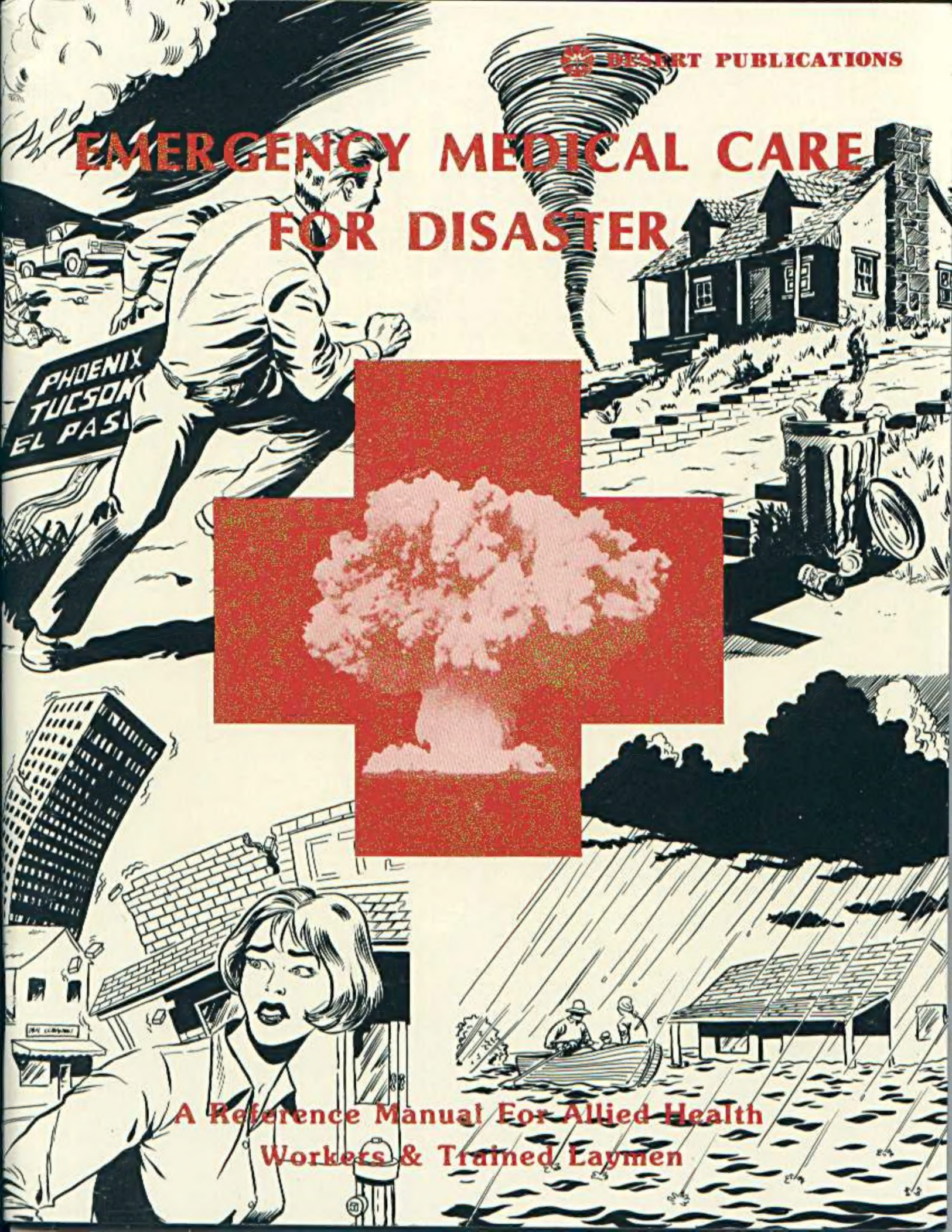
DESERT PUBLICATIONS

EMERGENCY MEDICAL CARE FOR DISASTER



A Reference Manual For Allied Health Workers & Trained Laymen

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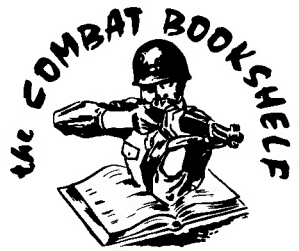

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EMERGENCY MEDICAL CARE FOR DISASTER

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SHELTER SANITATION AND HYGIENE

WHILE SANITATION and hygiene in the fallout shelter are actually the problems of the shelter manager, they are also a very real concern of the health personnel. For that reason, those responsible for shelter health should work closely with, and advise, the shelter manager on the problems of sanitation and hygiene.

Ventilation

In fallout shelters, ventilation is the most important environmental aspect. The health hazards to which improper, or inadequate ventilation contribute are heat exhaustion, and carbon dioxide poisoning.

Within a few hours after shelter occupancy, the rise in temperature and humidity due to the release of body heat and moisture will become noticeable. The warning signal of insufficient ventilation is a hot, humid, oppressive atmosphere.

The continued breathing of the same air may eventually raise the carbon dioxide level dangerously high. The lack of oxygen is of lesser concern in fallout shelters because carbon dioxide from the respiratory process will reach toxic levels before the oxygen concentration drops low enough to cause suffocation.

Water Supply

The water containers stocked by the Federal Government were filled in a prescribed manner from an approved water source and therefore the water may not need additional treatment. However, as a safety factor the water could be treated by adding 10 water purification tablets per 17½ gallon container of water in accordance with the directions contained in the Shelter Manager's Manual. The water purification tablets are stocked in the Medical Kits.

The water ration should be strictly adhered to and conservation practices closely followed until it is positively known that other sources of safe water are available. Although not a great deal of water can be expected to be used for purposes other than drinking, attention should be given to the possibility of reuse wherever feasible.

Food Supply and Sanitation

Bacteria can reproduce rapidly in certain types of foods at room temperature. Some types of bacteria, which may find their way into food, can, because of their nature and great numbers, produce a "food infection" in those who eat it. Other types produce what is known as "food poisoning".

As the illnesses caused by food infection or food poisoning usually affect a large percentage of those who consume the food and can cause complete prostration of practically everyone affected, an outbreak of food-borne illness could create a very serious situation in the shelter. It is essential, therefore, that the utmost care be exercised and precautions taken in handling, storing, or using food in shelters. Food handlers should be carefully selected and should always cleanse their hands prior to handling food. The food stored in shelters by the Federal Government was selected so as to minimize the possibility of food poisoning and food infection.

Attendants working in the Medical Treatment Area should not work in, nor be permitted in the Food Service Area. This applies also to any person attending adults or children with diarrhea who are not confined to the treatment area.

Waste Disposal

One of the main modes of disease transmission is through waste, both human and refuse, and when people live in close confinement, as in a community fallout shelter, the possibility for the rapid spread of typhoid fever, dysentery, diarrhea, and other filth diseases sharply increases. This hazard, the inconvenience, and the discomfort caused by inadequate toilet facilities can be greatly reduced by careful planning, preparation, and supervision.

Waste products, such as bandages, that contain infectious organisms, should be handled with particular care.

Pest Control

It is not advisable to use fine insecticide sprays or aerosols in the shelter since all are toxic in varying degrees to man. Therefore, in the confinement of the shelter some may cause toxic reactions or aggravate respiratory illnesses.

Personal Hygiene

Personal cleanliness will be one of the most difficult of all practices to control in the shelter environment. Yet, this is one of the most critical aspects from a standpoint of personal comfort and transmission of certain diseases. However, even under the most austere conditions, there are practices which may be followed to minimize discomfort and disease transmission. Cleanliness should be maintained as much as possible.

Medical Treatment Area

There will be a need for an area to be set apart and designated as the Medical Treatment Area.

It should be located in an area with good ventilation and if at all possible in a section separate from the general population. This is especially true of what might be considered the "Isolation Ward" used for persons having, or suspected of having, infectious diseases particularly of the respiratory type. The air should flow from the Medical Treatment Area, and especially the "Isolation Ward," to the exhaust opening and not towards the area occupied by others in the shelter.

TREATMENT BY SYMPTOMS AND CONDITIONS

Abrasions and Contusions
Cuts and Lacerations

ABRASIONS (friction burns) are caused by rubbing or scraping off the outer layers of the skin or mucous membrane. They may become easily infected if bacteria-laden foreign bodies are ground into the abraded surface. Contusions (bruises) are caused by blows or falls that break small blood vessels under the skin without breaking the surface. Laceration s(torn or traumatic wounds) are more prone to infection than cuts (incised wounds).

The value of early and proper treatment of minor injuries cannot be overstressed. Under shelter conditions where infection will be a problem, these injuries should not be ignored, provided always, there is the opportunity to treat them.

WHAT TO DO

Minor contusions:
Need no special attention.
Apply cold compress for pain and swelling.

Minor cuts:
Wash and cover with sterile dressing.

Lacerations:
Control bleeding.
Clean surrounding skin if very dirty.
Cover with sterile dressing.
Consider penicillin if infection develops.

Symptoms

An injury from a blow which causes a bruise is first red, then discolored. A "black eye" is a typical example of a bruise. If the injury is located over or around a joint and motion is limited or causes pain, a sprain, dislocation or fracture should be considered. A bruise of the scalp may mean a head injury. (See HEAD INJURIES.) Try to establish the type of injury which caused the bruise in evaluating the damage caused. Internal bleeding may accompany bruises of the abdomen.

Treatment

In general, *minor bruises* (black and blue spots) need no attention. If there is considerable swelling and pain, apply cold compresses, or ice bag, if available, to relieve pain and limit discoloration. If skin is broken, treat as an open wound.

Minor cuts and scratches may be washed with soap and water with a clean cloth or cotton swabs. Rinse with clean water and cover with clean bandage or sterile gauze.

Lacerations should have hand pressure applied over gauze pad to control bleeding (See *Bleeding.*) Tie bandage over sterile dressing. If skin around wound is extremely dirty, clean gently with surgical soap and water after bleeding stops. Wash away from the wound. Dirt remaining, such as grease, may be removed by isopropyl alcohol. Then apply sterile dressing. Watch patient for several days for signs of infection-inflammation characterized by pain, heat, redness and swelling around the wound. Consider penicillin at earliest sign of infection. (See instructions for use of penicillin.)

Patients with lacerated or penetrating wounds should be given priority for evacuation from the shelter so they may receive a tetanus booster or anti-toxin.

Addiction

Drug addicts and alcoholics will undoubtedly be a problem in some shelters. The addict has an overpowering desire or need to continue taking the drug and to obtain it by any means. Prolonged taking of a drug creates a physical dependence on it which necessitates its continued use to prevent abstinence symptoms. Emotional dependence is the distinguishing characteristic of all habit-forming drugs.

WHAT TO DO

Identify addicts, if possible, on entry.

Determine whether they have their drugs, etc.

Sedate, if necessary.

Control alcoholics' use of alcohol, if available.

Restrain patient, if necessary.

Don't Initiate Treatment of Addiction.

Symptoms (Drug)

The sign and symptoms of drug addiction vary with the drugs.

There are no characteristic signs of addiction to opiate drugs except the needle marks and scars on the arms and legs. However, many addicts spend their entire income on drugs and eat little so they may show signs of emaciation. If the opiate is suddenly withdrawn from a person who is strongly addicted to it, as will likely happen when he enters the shelter, acute illness develops. There is increasing restlessness accompanied by sweating and sometimes frequent vomiting. Uncontrollable muscle twitching accompanied by severe muscular aches in the back and legs contribute to his inability to sleep. Symptoms reach maximum intensity 48 hours after the last dose, continue intense for 24 hours and thereafter gradually decline. In 7 to 10 days after withdrawal, the acute symptoms subside, but patient will be weak and nervous for several months.

The barbiturate addict shows signs of intoxication, confusion, ataxia, slurred speech, drowsiness, amnesia, diminished reflexes and involuntary movement of the eyes. If the person has been taking a barbiturate daily for as long as two months and the drug is withdrawn abruptly, the person is likely to suffer epileptic-like seizures 1 to 7 days later. After 2 or 3 convulsions the patient may develop a delirium.

Symptoms (Alcohol)

Symptoms of drunkenness are usually readily recognized but the chronic alcoholic may show additional signs of mental and physical disease. If the chronic alcoholic is suddenly deprived of alcohol, delirium tremens may occur which may last for 2 days or several weeks. Occasionally the patient will sink into a coma, a condition that usually ends fatally.

Treatment

Treatment should be directed toward lessening the problem for the good of other shelter occupants. With the limited supplies of the shelter this may not be possible. Withdrawal of drugs is by no means synonymous with treatment and in the shelter may create a problem. For the welfare of all, the addict should be permitted to continue using his drug while in the shelter. If he does not have his own drug, he should be given phenobarbital. If his addiction is not the phenobarbital drug, larger than average doses of phenobarbital given more frequently may be necessary. If his addiction is phenobarbital, use the smallest amount that will control his need.

Alcoholics may be able to do without alcohol for a short period of time. Under strict supervision and control they may be allowed alcoholic beverages, if any are available. Phenobarbital may be given if they show signs of nervousness, tremors, or mental symptoms.

It may be necessary to apply restraints to both the drug addict and the alcoholic to prevent them harming themselves and others.

Allergic Reactions

Allergy is the term used to describe a condition of unusual or exaggerated sensitivity to a substance which is harmless in similar amounts for most people. Fortunately many people are able to recognize their condition from past experience and insofar as practical tend to avoid contact with the offending agents.

WHAT TO DO

Avoid contact with offending agent, if possible (inhaling, swallowing, touching, etc.)

Correct factors connected with or contributing to such contacts.

Symptoms

Some allergic reactions assume many easily recognized forms but many others are difficult or almost impossible to identify. Persons may be strongly affected by climatic, seasonal, nervous tension, contact, clothing, plus food and drug factors. Certain reactions may be expected under shelter habitation conditions which occupants have not previously experienced. They may take such forms as hay fever, asthma, various degrees of skin affections and irritations, itching, hives and, swelling of the lips and eyelids.

Treatment

It is hoped that patients who have a known allergy and are being treated for it will bring their prescription drugs with them into the shelter. Phenobarbital may be helpful in those cases of allergy having a large emotional overlay. It should be used with caution, however, and the patient watched for symptoms of depression.

Many forms of allergic reactions require highly specialized prescription drugs not available in the shelter. Care of these people may be limited to making them as comfortable as possible. Additional ventilation seems precluded. Avoidance of offending agents seems impossible. (*See Itching.*)

Anoxia (Hypoxia)

Anoxia, including asphyxia (suffocation) and cyanosis (blueness of lips and nail beds), is a condition in which there are both an oxygen deficiency and an increase in carbon dioxide in the blood and tissues.

WHAT TO DO

Be alert for first symptoms of anoxia in shelter occupants.

Improve ventilation, if possible.

Give artificial respiration if breathing stops.

Give oxygen, if available.

Symptoms

The severity of an anoxic condition, the rapidity of its development and its duration vary with individuals and the causative factors. Therefore, the signs and symptoms of an oxygen deficiency vary in degree and severity. Manifestations of acute anoxia (such as may be encountered in poorly ventilated shelters) include dyspnea (labored breathing), rapid pulse, cyanosis (blueness of the skin or nail beds), headache, loss of appetite, insomnia, and delirium. In severe cases, muscular twitchings, convulsions, unconsciousness, and death may ensue. The after-effects of acute non-fatal anoxia include headache, lethargy, nausea, and vomiting, and may persist for 48 hours or longer.

Cyanosis, the classic sign, is not a perfect indication of anoxia. A serious deficiency of oxygen in the body can occur before cyanosis is recognizable. Blueness of the lips or nail beds often occurs on a local circulatory basis. This is known as local anoxia and is characterized by symptoms and signs related to the affected part or area such as the brain, heart, or lower extremities. In local anoxia there may be attacks of syncope (fainting), angina pectoris (chest or heart pain), or intermitent claudication (limping, lameness, or difficulty in walking). The skin of a locally anoxic area may by cyanotic, often with induration (hardening of the soft tissues) which may even go on to ulceration (sores).

Treatment

Because clinical signs and symptoms of mild anoxia usually are inconspicuous, one must be alert to its possible development in shelters. Only in this way can therapy be instituted promptly to combat the disorder before it is of such severity as to cause permanent damage. It is hazardous to delay treatment until the appearance of cyanosis (blueness of skin or nail beds) or severe dyspnea (labored breathing).

The best possible ventilation should be maintained for the patient. If breathing becomes greatly depressed or stops, artificial respiration will be necessary.

It must be recognized that one patient with anoxia may be the forerunner of more with the same signs and symptoms if the condition is thought to be environmental in origin.

Appendicitis

Appendicitis is an inflammation of the appendix which is located in the right lower portion of the abdominal cavity. With surgical facilities available, removal of the appendix would be the safest procedure. However, many patients with acute attacks of appendicitis recover without an operation and in the shelter, with surgery out of the question, the patient has no choice.

WHAT TO DO

Bed rest (head and shoulders raised in semi-sitting position).

No solid food.

Fluid in small amounts with salt and soda added.

Ice bag, if available, kept over the appendix area.

Sedate with phenobarbital.

Give penicillin or sulfadiazine.

Give phenobarbital and aspirin for pain.

WARNING . . . DO NOT GIVE LAXATIVES

Symptoms

There is a sudden onset of pain in the abdomen which is usually accompanied by loss of appetite, nausea and vomiting, but not usually by diarrhea. After several hours, the referred pain shifts to the right lower quadrant and is continuous, dull or severe, accentuated by coughing, sneezing, or jarring. There is localized tenderness (to touch) usually in the region of the appendix, which is halfway between the navel and the right front pelvic bone. Nausea and vomiting usually decrease when pain becomes localized. Mild fever may be present and the pulse is more rapid than normal. Attacks of appendicitis are likely to recur, so that a history of earlier attacks diagnosed by a physician would help in this diagnosis.

The patient should be kept at absolute bed rest with head and shoulders elevated in a semi-sitting position. An ice-bag, if available, should be kept over the appendix area in the right lower quarter of the abdomen. If ice is not available, water as cold as possible may be used in the ice bag or in applying cold wet compresses to the area. Phenobarbital and aspirin may be given for the relief of pain, discomfort, and nervousness, which will permit the patient to remain more nearly at "absolute bed rest". This is an extremely important part of the treatment. Penicillin may be given unless the patient has a sensitivity to it in which case sulfadiazine (if patient is not sensitive to it also) (see instructions for use of penicillin and sulfadiazine). Food should be withheld until acute symptoms subside, as anything by mouth stimulates peristalsis (muscular movements of the intestinal walls) which moves the appendix, making it more difficult to keep the infection localized in one spot in the abdomen in case of perforation. However, it is essential that adequate fluids be given in small amounts at frequent intervals (a couple of tablespoonsful every half hour).

When the severe acute symptoms have subsided, then small amounts of liquid food, if available, may be given. As the patient convalesces this liquid diet can be changed to a soft diet (if possible), which should be continued until all symptoms have subsided. This patient should be given high priority for early transfer for surgery when possible.

Athlete's Foot

Athlete's foot (ring-worm of the feet), a common foot ailment, is caused by a fungus which thrives best in a warm, moist, poorly ventilated area. The feet, particularly the spaces between the toes, offer ideal conditions for the fungus which is almost always on everyone's feet but causes no trouble unless it starts to grow. Under shelter situations there are many factors favoring fungus and bacterial growth, chief among which are lack of bathing facilities, changing of socks and shoes, excessive sweating. Men are more likely to develop athlete's foot than women because women's shoes and hose are usually lighter and better ventilated than men's.

WHAT TO DO

Keep the feet well aired, ventilated.

Keep the feet dry.

Remove shoes and socks while sleeping.

Dust with talcum powder, if available.

Symptoms

There is dampness of the skin between the toes, usually accompanied by a scaling of the skin, or small blisters, between the toes and possibly elsewhere on the feet. There is usually itching which may be quite intense and annoying and which frequently is the first awareness a person has of the presence of athlete's foot. If the condition goes unchecked, the skin may become infected.

Treatment

Good foot hygiene is the best prevention. Foot baths will probably be out of the question but in their absence the feet should be kept clean and dry, particularly the space between the toes. The loose macerated skin should be rubbed away and, if available, dust on talcum powder. In hot weather shoes of light, porous fabric will be helpful and the removal of shoes and socks (or stockings) while sleeping is essential.

Bleeding (External)

Bleeding should be controlled as quickly as possible to prevent excessive blood loss which causes weakness, dizziness, perspiration, nausea, thirst, rapid pulse, shortness of breath, fainting and collapse. The loss of as little as a pint of blood from a child, or a quart from an adult, can have disastrous results.

WHAT TO DO

Apply even pressure with dressing or compress directly over wound to control bleeding.

Use bare hand if bleeding is severe and dressing not immediately available.

Leave dressing in place and apply bandage over it to continue pressure.

Elevate wounded limb above heart level whenever possible.

Check bandage to be sure it is not too tight and cutting circulation.

Treat for shock.

Dont Use a Tourniquet—unless the wound is so large and the bleeding so profuse that pressure and bandaging are ineffective or impractical, then use it only as a last resort to save a life at the sacrifice of a limb.

Treatment

The simplest method to control bleeding is to apply pressure to the site of the bleeding. If the bleeding is slight, the bandage used to hold the compress over the wound usually exerts sufficient pressure to control the flow of blood. In cases of more severe hemorrhaging, use a pad of sterile gauze, or the cleanest material available. The cleaner the cloth, the more effective it is in preventing infection, but do not hesitate to use available clothing, even soiled materials, or the bare hand to check the flow of blood. Loss of blood is more dangerous than immediate risk of infection. The compress should be large enough to completely cover the wound. The pressure should be applied evenly over the entire wound. This will tend to squeeze the broken blood vessels closed, which helps clots to form. Pressure unevenly applied can cause the bleeding to persist. Continue to apply pressure until bleeding stops.

If there is a foreign body embedded in the wound, do not try to remove it, leave it in the wound. It may be plugging a blood vessel and removal may increase the bleeding. The compress and bandage may be applied over the wound without removing the foreign body.

If the wound is so large and the bleeding so profuse that pressure and bandaging are ineffective or impractical, then the tourniquet may have to be used as a last resort to save a life at the sacrifice of a limb.

For an arm tourniquet . . . wrap a piece of bandage or cloth twice around the arm to form a loop above the elbow and tie the ends together. Insert a stick under the loop and twist just tight enough to stop the flow of blood. Tie the free end of tightened stick with another bandage to hold in place. Where possible, a pad should be placed under the twisting area for protection. Do not loosen the tourniquet after the bleeding has stopped as more damage may be done. In an emergency, a belt makes a good improvised tourniquet. By tightening a belt around the limb, circulation can be stopped.

The tourniquet has one advantage in that once applied, it permits you to perform other emergency procedures.

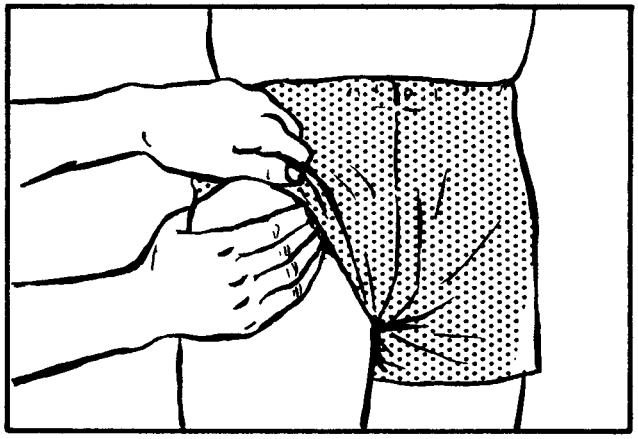

FIGURE 1.—Applying pressure to leg artery.

To locate the artery in the leg, it is necessary to exert quite a bit of pressure with the fingers to feel the throbbing. When the artery is located, press it hard between your fingers and the leg bone.

A wounded limb should be elevated above level of body, especially the bleeding part. Support it with pillow or padding.

Once the control of bleeding has been established, treatment of the patient should be to combat shock. The entire body should be wrapped in blankets to prevent chilling and the patient should be given small sips of oral electrolyte solution (1 teaspoon salt, ½ teaspoon baking soda, 1 quart water) at frequent intervals to prevent shock.

The pressure dressing should be checked periodically and loosened if it seems too tight and is interfering with the blood circulation which will be indicated by bluish discolorations and swelling, or unusual paleness and coldness. The bandage is apt to tighten as the injured part swells; it should be loosened.

If bleeding continues don't remove the dressing but apply new ones on top of it. If properly applied, the dressing should be allowed to remain in place undisturbed for 24 hours or longer.

When bleeding has stopped (or is believed to have stopped) do not remove the dressing from the wound even though it may be saturated with blood. Apply additional layers of folded gauze or cloth over the old dressing and bandage snugly and firmly. Bleeding in many instances can be controlled by pressure dressing alone.

If direct pressure and the use of a dressing do not stop the bleeding, press your fingers directly against the blood vessel supplying blood to the area of the wound. Press the vessel against the underlying bone. This will lessen the bleeding although it may not stop it entirely.

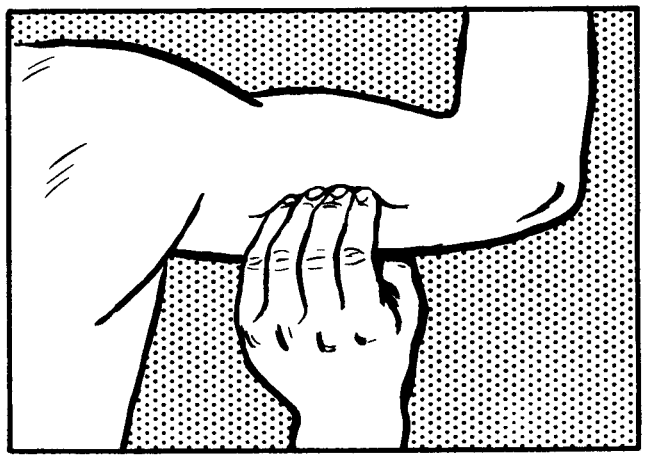

FIGURE 2.—Applying pressure to arm artery.

To stop bleeding in the arm, place the fingers directly under the biceps muscle and against the artery which you will feel pulsing. Press the artery hard against the bone.

Neck wounds bleed severly. To prevent the patient's choking, he should sit with head bent forward or lie on his side. A direct pressure dressing is then applied to the wound. Wrap the bandage over the dressing covering the wound and around the neck. Tie the ends loosely.

Jaw or cheek wounds should have a pressure dressing applied and held in place with a bandage wrapped under the chin and over the top of the head. The bandage should be tied in a bowknot, with the ends easily available to the injured person for quick release if he has to vomit or cough hard enough to bring mucus into his mouth. After the bandage has been tied securely in place, the patient should lie down with the injured side of the face down to permit drainage

of oral secretions and to provide additional pressure.

Head wounds of the scalp or forehead should have a dressing applied. To secure the dressing it may be necessary to wrap a bandage several times around the head, over the top of the head, and over the dressing covering the wound. If there is severe bleeding and you need to apply considerable pressure, pull the bandage quite tight before tying. The patient should remain lying down with his head raised slightly.

Bleeding from the Ear

Blood or drainage from the ears may indicate a serious type of skull fracture. Pus drainage from the ear may indicate an ear infection or ruptured ear drum. However, a clear, bloody discharge from the ear may mean a relatively minor injury to the ear canal.

WHAT TO DO

If possible determine whether there has been a head injury.

If so, refer to section on Head Injury.

Apply 2 or 3 gauze pads over ear and hold in place with bandage.

DON'T wash ear because of danger of introducing infection.

Give penicillin for ear infections.

Treatment

Don't wash the ear because of the danger of infecting the brain, which could be very serious. Apply two or three gauze pads over the outside of the ear and hold in place with either bandage or tape, if available.

Bleeding (Internal)

If a person has suffered a severe blow, blunt or crushing, with or without external signs of blood loss, particularly if the injury is to the abdomen, chest, head, or torso, suspect internal bleeding. Foreign bodies in the stomach and some chemical poisons may cause hematemesis (vomiting blood).

WHAT TO DO

Keep patient quiet and warm.

Keep patient lying on his back unless he breathes easier propped up.

Keep breathing passages open.

DON'T move patient unless absolutely necessary.

Symptoms

Signs of internal bleeding:

From the stomach: vomiting material which looks like coffee grounds.

From upper intestines: stools contain dark, tar-like material which is partly digested food.

From lower intestines: stools contain bright red blood.

From chest and lungs: coughed-up blood is frothy, bright red.

Some injuries give only general signs of internal bleeding such as: restlessness, anxiety, thirst, pallor, weakness, rapid but weak pulse.

Keep patient quiet, warm, lying on his back with head turned to one side if he is vomiting or coughing. Keep breathing passages clear of obstruction by wiping blood out of his mouth and throat. Patient bleeding from lung may not be able to breathe if lying flat. He will have to be propped high enough so he can breathe.

If the patient is not vomiting, feeding should be promptly instituted regardless of the severity of the hemorrhage or its continuance. The food should be a bland, gruelly substance administered frequently in small amounts. In addition, oral electrolyte solution (1 teaspoonful salt, ½ teaspoonful baking soda, 1 quart water) should be given to combat shock.

Blisters

Blisters, not caused by burns, are the results of excessive rubbing or repeated pressures on the skin. They are common on the feet from poorly fitting shoes or stockings and on the hands from using unfamiliar tools or equipment. As there is danger of

infection, blisters should not be dismissed too lightly in shelter living.

WHAT TO DO

Leave blister unbroken.

If blister is unbroken, apply petroleum jelly and cover with sterile dressing.

If blister is open, clean area around it and cover with sterile dressing.

Treatment

The primary aim in the treatment of blisters is to keep the skin intact and to relieve pain. As there is greater danger of infection if the blister is broken or opened, it should be left alone if it can be adequately protected against breaking. The unbroken skin offers the best protection against infection. To help keep the unbroken skin intact and to relieve pain, apply petroleum jelly and cover with sterile dressing. This will also help to prevent infection. If the blister is broken, wash the area around it with surgical soap and water and cover with sterile dressing. Leave the dead skin in place. It should stay on as long as possible to provide protection.

Burns

Burns may be caused by flame, by thermo nuclear flash, by contact with hot metals, by hot water or steam (scalds), by electricity, chemicals, friction, or radiation. The seriousness of a burn depends upon the extent of the burned area and the severity or degree of damage.

First degree burns are on the surface, the skin is merely reddened but no damage has been done to the deeper layers or tissues beneath. Unless they cover more than 25% of the body, they are usually not serious.

Second degree burns develop blisters and there is danger of infection but there is no damage to the structures beneath.

Third degree burns, even in a relatively small area, are serious. The injury is deep and the underlying tissue is destroyed. The burned area may appear either charred or white. Infection is a real danger.

The seriousness of a burn is not always determined by the degree of its severity but also by the extent of its area. For example, a second degree burn covering a large area of the chest is likely to be more serious than a third degree burn on a finger.

WHAT TO DO

Treat for shock.

Relieve pain.

Prevent infection.

Cover burned area with dry, sterile dressing (or cleanest available).

Give oral electrolyte solution to replace fluid loss from body.

What Not To Do

Don't pull clothes over burned area . . . cut clothes off.

Don't remove pieces of cloth or debris that stick to burn.

Don't open blisters.

Don't use ointment, petroleum jelly, or any type of medication on severe burns.

Don't use iodine or an antiseptic (except soap) on burns.

Don't apply dressings that are not clean or specially prepared.

Don't touch burn with anything except sterile or clean dressing.

Don't change dressings that were initially applied until absolutely necessary. They may be left in place 5-7 days.

Don't be too concerned if dressings are not available. Open air treatment is usually sufficient, though painful.

Treatment

If the burn is severe treat the patient for shock although the signs may not be apparent. Give oral electrolyte solution (1 teaspoon salt, ½ teaspoon baking soda, 1 quart water). Make him as comfortable as possible and keep him lying down.

Pain is caused partly by air coming in contact with burned area so it is important to exclude air promptly. If it is a minor burn without blisters cold water will reduce pain. Give aspirin for pain.

Danger of infection is greatest with second and third degree burns. These may be washed with a mild soap solution (use surgical soap). Do not try to wipe off all the dirt, merely wash lightly. The antiseptic action of the soap will help to reduce the hazard of infection. It is not necessary to rinse unless ample supply of *sterile* water is available.

Cover burned area with dry, sterile dressing if available. (*Exception:* Don't cover first degree burn.) If not, use clean towel or sheet and bandage to hold dressing firmly in place. The even pressure of the bandage will help reduce pain. Dressing should be thick enough to keep out air. If adjoining surfaces of skin are burned, be sure they are separated by gauze to keep them from sticking together, for example, toes, fingers, armpits, genitals, and pendulous breasts. The dressing on a serious burn should be left as long as possible—a week, if necessary. Do not open blisters or remove dirt or debris from burned surface. Blisters are not harmful and they protect under-lying tissues against germs.

Fluid intake—Immediately after injury, a diminution in blood volume results from losses of fluid externally through the wound. Loss of fluids cause peripheral circulatory collapse unless they are replaced. The following are fluid replacement estimates for a shelter situation:

Severely burned patients, give oral electrolyte solution (1 teaspoonful salt, ½ teaspoonful baking soda, 1 quart water) every 15 minutes for 2 or 3 hours. If sufficient water is available, the total fluid intake for the first 24 hours may be estimated according to body weight (1 pint of fluid per each 20 pounds). For the second 24 hours the fluid requirements are about half the amount estimated for the first 24 hours. After 48 hours, water and food may be taken as desired and tolerated.

Moderately burned patients, give oral electrolyte solution (1 teaspoonful salt, ½ teaspoonful baking soda, 1 quart water), ½ glass every 15 minutes for 2 or 3 hours. Afterwards, 1 glass of oral electrolyte solution should be given every 4 hours for the first day. After 24 hours, food and water may be taken as desired and tolerated.

Don't force patient to drink it if it induces vomiting.

Don't give fluids when a person is unconscious or semi-conscious.

Severe burns on the face, neck and chest cause considerable swelling which starts in the nostrils and throat within a few hours. The swelling becomes progressively worse during the following 24 to 48 hours. Watch the patient's breathing very carefully. It will become irregular and labored due to the restricted air passages and he will be breathing through both his mouth and nose. Check frequently the dressings, bandages and clothing which may become too tight because of the swelling and stop circulation. Loosen bandage but *do not* disturb the dressing next to the burn. If the person is unconscious and has difficulty breathing, it is important to keep the air passage open for him. Hold the jaw up to keep his tongue from falling back and obstructing the passage. If the nose is obstructed and he has difficulty breathing through his mouth, insert a teaspoon, rounded part up, into his mouth and press down on the back of the tongue. This will help open the airway. In an emergency use the middle and index fingers. Most of the swelling will disappear within 72 hours after it first appears.

The treatment for chemical burns requires speed. While the chemical remains on the skin it is still doing damage. Thoroughly wash the burned area with large amounts

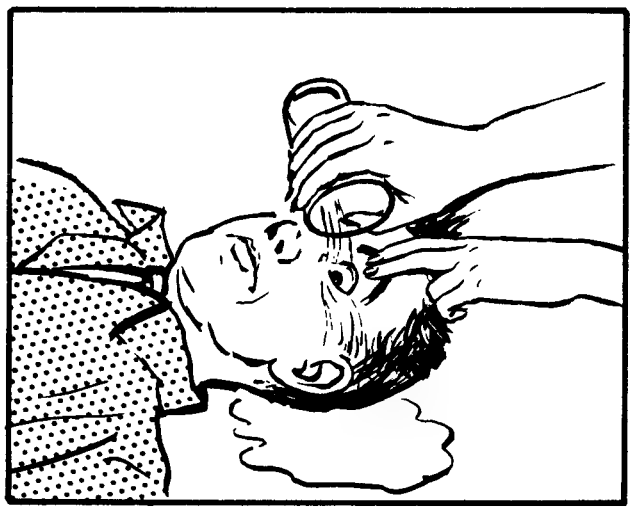

FIGURE 3.—Flushing the eye.

of water (preferably lukewarm) to dilute and completely wash off the chemical.

In removing chemicals from the eye, pour water into the eye close to the nose. With the head turned to one side the water will run toward the temple side, away from the other eye. Use plenty of water. Remove all clothing that has the chemical on it. Even a small piece of clothing may have sufficient chemical to extend the burn. After the chemical has been completely washed off, treat the burn as any other. There are special solutions to neutralize certain chemicals and acids but don't wait to make a solution. Speed is important and plain water will do more good if used immediately than a neutralizing solution that takes time to prepare.

Treat electrical burns as serious burns. They are usually deep although the person who has been exposed to severe electrical shock may not be aware of the burns. Electrical burns are most often found on the hands and arms which came in contact with the electric current, and on the feet where the charge left the body.

Childbirth

A great many babies are born every day outside of hospitals, without professional attendance. There will be many born in fallout shelters and in a disaster situation some may be born prematurely. As quickly as possible after the shelter is occupied, all pregnant women should be registered and the expected date of birth recorded. The pregnant women of special concern are . . . (1) those who are in labor or expecting at any time . . . (2) those who are expecting within a week or two . . . (3) those who have had difficulty with previous confinements and/or who have reason to expect difficulty by reason of disease or abnormalities of which they have been made aware.

WHAT TO DO

Encourage and reassure the patient frequently.

Childbirth is natural, let nature be your helper.

Assign a person to assist and remain with patient.

Place mother and attendant in most suitable area.

Permit her to walk, as desired.

When membrane ruptures have patient lie down.

Have hands as clean as possible.

Keep hands away from birth canal.

See that baby breathes.

Place baby across mother's abdomen and keep warm with covers.

Tie the cord in two places.

Cut cord with sterile instrument.

After placenta is expelled, massage mother's abdomen.

Change bedding, sponge mother and make her comfortable.

Preparation

The allied health worker should assign someone to assist the pregnant mother. She (or he) should be informed of the expected date of birth and any information which the mother may have learned during her prenatal care. A delivery area should be selected and it should be prepared with respect to quiet, warmth (or coolness), cleanliness, available supplies and equipment. The mother will need a clean surface to lie on for the actual delivery. Clean plastic material and/or paper can be used for padding and protection of the improvised delivery bed. She will also need clean towels, sheet, or cotton garment, and perhaps warmer covering such as a sweater, jacket or blanket. The infant's crib can be improvised from a box, drawer, etc., lined with a blanket and with crinkled paper for padding. Hopefully, the expectant mother will have anticipated the need for some of the articles and will have brought them with her to the shelter. Also, it is hoped she has had some prenatal care, especially when a first pregnancy is involved. The patient is faced with a complete disruption of her pre-

arranged plans which, added to the disaster situation, may completely destroy whatever composure and confidence she may have had approaching delivery. An apprehensive patient is more likely to have a protracted and difficult labor than a confident patient. Her assurance must be restored, if possible, by explaining the normalcy of birth plus the fact that adequate facilities are available and that she is in good hands.

Signs of Labor

The expectant mother should be instructed to report the first evidence of onset of labor. This will probably give enough time for the necessary preparations. Symptoms usually consist of severe cramps in the abdomen or lower back, which are, as a rule, similar to menstrual cramps although considerably more severe. However, rupture of the "bag of waters" may be the first sign of labor.

First Stage of Labor

Labor (the process of childbirth) is divided into three stages. The first stage is the period during which the cervix (neck of womb) gradually expands to a size large enough to let the baby emerge. This stage may last for many hours and for mothers of first babies it may last as long as 12 hours or more. During this period the patient should be encouraged to rest and be as comfortable as possible. She may wish to lie down or she may prefer to walk, which she should be allowed to do in the early stages. She may want to be alone or she may want someone with her but she should be permitted as much privacy as possible.

Give her water to drink if she desires it, but it is better if she does not take any solid food during active labor. Encourage her to urinate as necessary.

During this stage the mother will have contractions of the uterus which are usually felt in the lower back first and later in the lower abdomen. At first, they may be mild and somewhat irregular in timing, but as labor progresses they become regular, stronger, and more frequent. When the pains are first felt they may be at 20-minute intervals, and last only 10 to 15 seconds.

Advise the mother that the bag of waters may rupture at any time. Sometimes it occurs before labor or it may occur at any time during the first stage. Frequently, it is one of the first signs of labor. The colorless fluid may gush out or it may come out in small amounts. A discharge of blood-tinged mucus may also be an early sign of beginning labor or may occur later in the first stage.

As labor progresses and contractions become stronger and more frequent, encourage her to rest between them. Once labor has begun, it can be expected to go on to its completion. Rub the mother's back, bathe her face, and try to help her relax. Do not give medication in an effort to be helpful.

To help you determine the progress of labor, place your hand on the mother's abdomen, just above the navel, where you can feel and time the contractions of the uterus as to duration and interval. They will become more and more frequent, closer together, stronger, and last longer until they come every 2 or 3 minutes. It will not be long now before the baby is born.

Second Stage of Labor

At this stage the mother will notice a change. Instead of the tightness in the lower abdomen and pain across the back, she will feel a bearing down sensation almost as if she were having a bowel movement. This means the baby is moving down.

As the second stage of labor progresses, which is usually only ½ hour to 2 hours long, the mother should be on her back with the knees drawn up and spread apart. Put something dry and clean under her, such as cloth, piece of plastic, or a newspaper. There may be more bloody mucus discharge and if the bag of waters did not rupture earlier you may expect it to break at this time.

Most babies are born head first. You will first see a small part of the baby's head during a contraction as the mother bears down. This will usually disappear when the contraction is over. The portion of the head that can be seen will increase with each contraction until the head is actually born.

As soon as the bulge appears in the vaginal area and part of the baby is visible, the mother should breathe with her mouth open, with short breaths (panting like a dog), and avoid bearing down so that the baby will not be born too quickly; thus avoiding tears of the vagina. The mother may have a bowel movement during her efforts to push down. If a paper has previously been placed under her buttocks, perhaps it can be removed and replaced. Following a bowel movement the anal area may be cleansed with cotton or toilet paper. Cleansing must be done by wiping away from the birth canal in a downward stroke.

Thoroughly scrub your hands with soap and water if you are the one attending the delivery. DO NOT TOUCH THE BIRTH CANAL OR SURROUNDING AREA FOR ANY REASON AND INSIST THAT THE MOTHER KEEP HER HANDS AWAY FROM THE AREA ALSO. Let the baby be born without your aid. No attempt should be made to extract the baby in any way.

Usually the baby's head appears first, with the face downward. However, sometimes the baby will be born in a different position, buttocks first or occasionally a foot or an arm first. If this should occur, it is most important for you to have patience without interference. The natural process of delivery, though slower, will give the child and the mother the best chance of a safe and successful birth.

It is not necessary that the baby be born with haste; but usually quite shortly following the birth of the head, the mother has another bearing down feeling and the shoulders and the rest of the baby emerge. You will have to support the head to avoid the face from coming in contact with any material which could hamper breathing.

As the baby is being expelled, you should support the baby so that he will not come in contact with blood or waste material on the bed. If there is still a membrane from the water sac over the baby's head and face, it should immediately be taken between the fingers and torn so that the water will run out and the baby can breathe.

It occasionally happens that the umbilical cord is around the baby's neck when the head and neck appear; gently but quickly, without pulling, slip it over the head to prevent strangling.

After the baby is born, wrap a fold of towel or cloth around the ankles to prevent slipping and hold him up by the heels with one hand, take care that the cord is slack. To get a safe grip, insert one finger between the ankles. Do not lift him high in the air nor spank him. The baby's body is very slippery. Hold him over the bed so that he cannot fall far should he slip from your grasp. Holding him with his feet and hips elevated and supporting the head and shoulders with the other hand, extend the head back slightly so that any fluid or mucus can run out of the mouth. Never pull on the cord or put it under tension. Do not be in a hurry to tie and cut it. Most babies will cry right away while beginning to breathe. Some may be purplish blue in color and rather limp. Do not think that something is wrong because of these signs. After starting to breathe, he should become a healthy red color. However, should he not cry or breathe within 2 or 3 minutes, use mouth-to-mouth artificial respiration after checking that there is no mucus in the mouth and nose. With the baby lying on its back, and the head tilting back to allow a free passage of air, and the jaw held in a jutting out position, use very little force in blowing air into the baby's mouth. A short puff of air about every 5 seconds is enough. Stop as soon as the baby starts to breathe or cry. Show the baby to the mother and praise both of them. Wrap the baby in a clean cloth, a cotton blanket, or a piece of the mother's clothing, being careful not to put a strain on the umbilical cord, and place him on the mother's abdomen with his head slightly lower than his body facing toward you. It is most important to keep the baby warm and to be sure he is breathing properly. There is no hurry in cutting the cord.

Take as much time as necessary to prepare the ties and to sterilize a sharp instrument. Two pieces of sterile white cotton tape or two lengths of sterile gauze bandage, 1 x 9 inches, should be available to tie the

cord. If it is not sterile and boiling water is available, boil what you have, even strips of sheeting, for 15 to 20 minutes. It is important to wait for sterile equipment, if it is possible to get it, in order that there will be no introduction of infection through the cord to the baby by using unclean equipment. Tie the umbilical cord in two places, one about 4 inches from the baby and the other about 2 inches further along the cord toward the mother, making two or more simple knots at each place. Cut between these two ties with a clean (preferably sterile) sharp instrument, knife, razor blade or scissors. Place a sterile dressing about 4 inches square over the cut end of the cord at the baby's navel. This should be held in place by wrapping a "belly band" or folded diaper around the baby. If a sterile dressing is not available, no dressing or band should be used. Never use powder, solution, or disinfectant on the cord or navel.

Third Stage of Labor

Within a few minutes after the baby is born, or sometime within an hour or more, the mother will feel a brief return of labor pains which had ceased with birth. The uterus seeks to expel the placenta. Do not pull on the cord to expedite the process. Some bleeding may be expected at this stage. If a lot of bleeding occurs before the placenta is expelled, gently massage the mother's abdomen just above the navel. This will help the uterus to contract, help the placenta to be expelled, and help to reduce bleeding. It may, at this time, be desirable to put the baby to the breast for a minute or two on each side even though the mother has no milk as yet. This is a further aid to uterine contraction thus reducing the bleeding. Someone should stand by the mother and occasionally massage her abdomen gently for about an hour after the placenta is delivered. Following that, the mother should feel the rounded surface of the uterus through the abdomen and squeeze gently but firmly.

The bedding should be changed, and the mother sponged. Washing and light wiping of the perineal area should be done from front to back to avoid contamination. Apply a sanitary napkin as required. Keep the mother warm with blankets, and give warm drinks if available. After an hour the most critical time is over, and the mother may walk a short distance to a more comfortable or a safer place if necessary. Encourage her to drink plenty of fluids and she may eat whatever food is available. She will probably have uncomfortable cramping "after pains" in the lower abdomen for several days. Aspirin may help give relief, but the pains are physiological and should cause no concern. Phenobarbital may be given to sedate the mother and may be given with the aspirin for "after pain". She should empty her bladder every few hours. If her bowels do not move within 3 days after delivery, she should have an enema.

Twin Births

It is possible that the mother you are assisting might have twins. If she has had prenatal care during her pregnancy and twins are suspected, you may be forewarned. In any event, your care for mother and babies is just the same except you have two babies to take care of, to see that they are breathing well, and kept warm.

Each twin is usually smaller than the average newborn baby. They are more often born with the feet or buttocks first, but because they are small they should come out without difficulty. After the first baby is born and while you are expecting the placenta you may feel another baby in the mother's abdomen. Go through the same procedure with the second as with the first. It may be an hour after the first delivery before the second baby is delivered. Do not be alarmed. Wait patiently and watch the mother closely.

If you haven't already tied and cut the cord on the first baby, do it while you are waiting. You may also prepare sterile equipment for the second baby.

There is a cord and a bag of waters for each baby, but usually only one placenta, or two which have grown together and come out as one. Watch mother closely for bleeding.

The babies should be treated as premature if they are small.

Chills

Chills are usually associated with fever (See *Fever*) and are the sign of some disorder, perhaps of minor nature. Chills are caused by a number of things, such as the onset of most communicable diseases, malaria, pneumonia, exposure to cold, nervousness, pain and fear. At the onset of a communicable disease, the chill may be preceded, accompanied or followed by a vague feeling of bodily discomfort and fever. Usually the patient's temperature is rising when the chill is occurring and falling when the patient feels warmer and is sweating. Severe chills accompanied by shivering are usually a sign of a more serious ailment, provided the temperature of the shelter is not a reason.

WHAT TO DO

Keep person lying down.

Keep him warm.

When chills and fever occur intermittently refer to *Fever*.

Give aspirin for relief of pains and aches.

Give hot, stimulating fluids such as coffee, tea, or soup.

When chill is over take patient's temperature.

Don't try to diagnose, even though the symptoms may indicate a severe illness—treat the symptoms only.

Treatment

Keep person lying down and keep him warm. Although additional clothing and blankets may not stop the chill and shivering, the patient will be more comfortable. When chills and fever occur intermittently, refer to section on FEVER. Give aspirin for relief of aches and pains and give hot, stimulating fluids such as coffee, tea, or soup. The chill is usually short-lived. When it is over, take the patient's temperature. It will probably be elevated and further treatment will depend upon arriving at a determination of the cause.

Choking

Foreign bodies, particularly food, will occasionally lodge in the throat in such a way as to obstruct breathing. Occasionally children have marbles, coins, hard candy, etc., stuck in their throats. Usually these objects do not completely obstruct breathing and are dislodged without help. However, the victim's fright and agitation add to his need for air and aggravate his condition. The reassurance of your help will somewhat allay his fears.

WHAT TO DO

Hold child upside down and slap sharply between the shoulder blades.

Have adult bend far forward and slap him vigorously on the back.

If object is not dislodged, try hooking it out with a finger.

If impossible to dislodge and object does not completely obstruct, it may have to remain in place for several days.

If breathing stops, even after the obstruction is removed, start artificial respiration at once.

Treatment

If victim is a child, hold him upside down and slap sharply between the shoulder blades . . . or you may be able to reach the object with your finger more easily. Have adult bend far forward and give him a vigorous slap on the back. If object is not dislodged, it may be hooked out with a finger. If still unable to remove object, have person lie flat on his back and reach your finger over the top of his tongue and hook it around the object. This may force the object further down the throat and may cause later complications but it may, at least, permit the patient to breathe more easily.

If the foreign matter is impossible to remove . . . if it does not completely obstruct, it may have to remain in place for several days until such time as definitive medical care is available. During this period of waiting, the patient should be kept at rest and as quiet as possible. If breathing stops at any time during your attempts to dislodge

the object, start artificial respiration at once. Even after the obstruction is removed, artificial respiration may be needed to revive the patient and he must be watched carefully during the recovery period.

If the object is swallowed before it can be removed, do not give a laxative. If available, mashed potatoes may be given. Foreign objects that reach the stomach pass through the bowel harmlessly. DON'T force a child who has swallowed a sharp object to vomit.

Common Cold

Under shelter conditions the common cold may occur all too frequently. Every precaution should be taken to prevent its spreading. The symptoms of a cold also mark the onset of many communicable diseases which are far more serious than the common cold, e.g., diptheria, influenza, measles, scarlet fever, septic sore throat, whooping cough, etc.

WHAT TO DO

Keep patient at bed rest, or its equivalent, with fever of 100°F. or more.

Give aspirin for relief of aches, pains and minor fever.

Urge patient to drink fluids.

Give nose drops.

Give cough syrup, if available, for cough.

Have patient gargle for sore throat.

Give phenobarbital and penicillin, as indicated.

Symptoms

Colds usually begin with a dry tickling sensation in the throat and a "stuffed up" uncomfortable feeling in the nose. This stage is quickly followed by a runny nose, red, watery eyes, headache, malaise, fever, chilliness, sore throat and cough.

Treatment

Fever frequently accompanies a cold and a person with a fever should stay in bed, or its equivalent, until the temperature remains normal for 24 hours. Rest conserves the powers of resistance to avoid development of more serious complications such as bronchitis, pneumonia, middle-ear disease or sinusitis. Aspirin may be given (see dosage table) for the relief of minor aches and pains and will help reduce the relatively minor fever that usually accompanies colds. If it disagrees with patient, add ¼ teaspoon of sodium bicarbonate with each dose. Fluids should be encouraged and, if available, fruit juices are preferred. Nose drops should be used as directed on the bottle for stuffiness and runny nose. Precautions should be taken to avoid contact with the patient's nose if dropper is used. The patient should be warned to blow nose gently so as to avoid forcing material into sinuses and/or middle ear. The tickling sensation in the throat may be relieved by cough syrup, if available, or by sucking on a piece of hard candy or lump of sugar. For the sore throat, the patient should gargle every 2 or 3 hours with a warm solution (½ teaspoon of salt to 1 glass of water—or ½ teaspoon of sodium bicarbonate may be added to solution). If sore throat is very painful, dissolve 4 aspirin tablets (20 gr.) in ½ glass of water and use as gargle. If it is accompanied by temperature of 103° f. or more, penicillin should be considered. (See *Fever.*) If the patient has a sensitivity to penicillin, or if he develops symptoms of a sensitivity, or does not improve while taking it, then consider giving sulfadiazine. (See instructions for use of penicillin and sulfadiazine.)

If coughing persists and disturbs others, phenobarbital may be given. Sulfadiazine and penicillin are not indicated in treatment of the uncomplicated cold.

Precaution

Urge all persons to cover their mouths with tissue or handkerchief when coughing or sneezing.

Urge them to dispose of tissues or handkerchiefs promptly after they have been used.

Urge them to wash their hands thoroughly before handling or preparing food for others.

When mucus is coughed up into the mouth, urge them to spit it out into a tissue which can be disposed of.

Convulsions

Convulsions are seizures of the body indicated by involuntary, unnatural, and sometimes violent spasmodic contractions of the muscles. It is not a disease in itself but evidence of some underlying disease or condition. Convulsions may occur as comparatively common signs of beginning illness in children. There are various other conditions causing convulsions, e.g., apoplexy, chronic alcoholism, poisons, chronic kidney disease, epilepsy, nervous diseases, tetanus (lockjaw) and head injuries. After the seizure (or fit), the victim is dazed and exhausted and may sleep for some time.

WHAT TO DO

You can do nothing to shorten the attack.

Keep the person from hurting himself.

Without using force, slip folded handkerchief (nothing hard) between his teeth.

Give 1 or 2 phenobarbital tablets (1/2 gr. each).

If patient has his own drug, give as directed instead of phenobarbital.

Don't Force a Hard Object Between His Teeth.

Treatment

Don't try to restrain patient's movements completely except to prevent his hitting other objects. If you can do it without using force, slip something like a folded handkerchief or a piece of rubber (nothing hard) between his teeth to keep him from biting his tongue or cheek. Get him in as comfortable a position as possible. He may fall to the floor with the beginning of the attack, put something under his head and cover his thrashing arms and legs with a blanket to prevent self-injury. After the convulsion, if the patient is awake and restless, give 1 or 2 phenobarbital tablets (½ gr. each) and keep him lying down, warm and quiet. If the patient has his own drug with him, give as directed instead of the phenobarbital. When fully recovered, he should be questioned in an effort to uncover leads which might point to any of the diseases previously mentioned. *Don't* force a hard object between his teeth. You may injure him more than his biting.

Death

Deaths from illness and injury will undoubtedly occur in some fallout shelters. There are a few simple things you can do to give practical aid and comfort to the person near death and to others.

WHAT TO DO

When a person is dying . . .

Give him as much light and air as possible.

Urge others to give him as much quiet as possible.

Family should not crowd around him but someone should be near at all times.

Patient's lips should be kept moist.

The mouth and nostrils should be kept free of mucus.

Reassure members of the family that death is usually kindly and painless.

Treatment

For the comfort of the patient, within the limitations of the shelter, there should be as much quiet and order and as much light and air as possible. Members of the family should not crowd around him, but he should not be left alone. There should be someone nearby to hold his hand or give other expressions of care and affection.

The patient's lips should be kept moist and the mouth and nostrils free from mucus. This can be done by gently wiping out the mouth with cotton swabs dipped in cold water, lubricating the lips with cold cream, and keeping the head raised on a pillow to ease breathing. The face may be turned to one side and the jaw pushed gently forward to make it easier for the patient to swallow.

Usually a period of coma or semiconsciousness precedes death but it may be necessary to explain to persons in the shelter that, although the patient may seem to be unconscious and unable to respond to questions, he may still be able to hear and understand what is going on around him. The sense of hearing is often the last to be lost, and nothing should be said in his hearing to annoy or frighten him. Whispering may be as disturbing as displays of grief.

As death approaches the body temperature may rise and the patient may feel warm although his hands and feet may be cold. Keep him covered lightly. There is little physical care needed or possible for him but others in the shelter may need attention. In their distress, members of the family should not be allowed to ignore their own needs, especially for food and rest. They should be reassured that death is usually kindly, nearly always painless, and often like falling asleep. The sights and sounds that seem distressing for the patient as death approaches, frequently occur after he is no longer conscious.

Diabetic Emergencies

Diabetic emergencies may occur more often in a shelter environment because the diabetic will probably have difficulty adhering to his diabetic diet.

There are two types of diabetic emergencies: diabetic coma results from a lack of insulin and insulin shock is the result of too much insulin. The diabetic patient may become unconscious as a result of either type so it is important to know from which the patient is suffering.

Known diabetics should be identified immediately upon entering the shelter and it should be determined whether or not they have a sufficient supply of insulin with them and know how to administer it.

The diabetic patient should be informed of the advisability of briefing a nearby shelter occupant in the correct procedure to render assistance if either of the two diabetic emergencies should occur.

WHAT TO DO

If patient is suffering diabetic coma—

Give regular dose of insulin, if available.

If no insulin, make him comfortable and keep him warm.

If patient is suffering insulin shock—

If conscious, give teaspoon of sugar or sugar and water solution.

If unconscious, place teaspoon of sugar under his tongue.

Symptoms

The person suffering from a lack of insulin (diabetic coma) may have a flushed face with bright red lips. Other symptoms include a dry mouth thirst, lassitude, mental dullness, malaise and loss of appetite. His breathing may be labored and the breath will have a characteristic, fruity odor, like nail polish remover. If the condition progresses there is nausea, vomiting, dizziness, and finally coma.

A person with diabetes should be prepared with an adequate supply of insulin, other prescribed drugs and urine testing equipment when he enters the shelter. The diabetic patient will usually be familiar with the procedure of giving insulin to himself and he will know the precautions that have to be taken to prevent his suffering from too much or too little insulin.

Treatment

If a diabetic takes too much insulin or fails to eat properly after taking a customary dose, he may develop *insulin shock.* He will have an ashy, white face and his skin will be moist and clammy. He will usually perspire a great deal. His mouth may be moist, with possible drooling. Thirst is usually not present. Convulsions and loss of consciousness may develop.

If patient is suffering diabetic coma . . .

Give him his regular dose of insulin (if available). Hopefully, he will have his own supply and may be able to furnish dosage information. If insulin is not available, prop him up in partial sitting position. Make him comfortable and keep him warm.

If patient is suffering insulin shock . . .

If he is conscious, give him a teaspoon of sugar, a piece of chocolate, or sips of sugar and water solution.

If he is unconscious, place a teaspoon of sugar under his tongue. It will be absorbed into his blood. Recovery is usually rapid.

Diarrhea

Diarrhea (frequent, watery, loose stools) is usually a symptom of food illness and less

often organic disorders. It is often associated with unsanitary living conditions and undoubtedly will be a problem in the crowded conditions of shelter living. (Special attention should be given to precautionary measures.)

WHAT TO DO

Withhold any food for 24 hours.

Give water if person is not nauseated and vomiting.

Give kaolin and pectin mixture as directed on label (medical kit).

If diarrhea persists for 2 or 3 days and sugar is available give sugar-salt solution . . . (Dissolve 1 1/2 tablespoons of sugar and 1/4 teaspoon of salt in 1 quart of water.)

When diarrhea stops give warm liquid or soft diet if possible.

Exercise extreme care at all times in the handling of waste, contaminated tissues and other contact material to prevent infection to yourself and others.

WHAT TO DO—INFANTS

Omit 1 or 2 feedings.

Give boiled water if infant is not nauseated and vomiting.

If bottle-fed, dilute milk with equal amount of boiled water.

If diarrhea persists give sugar-salt solution every 3 hours.

Sugar-salt solution — 1 1/2 tablespoons sugar, 1/4 teaspoon salt, 1 quart water).

As diarrhea improves, gradually return the infant to his regular formula.

WHAT TO DO—CHILD 1-10 YEARS

Discontinue all food for 24 hours.

Give water if child is not nauseated and vomiting.

If diarrhea is severe, give sugar-salt solution (1/2 tablespoon sugar, 1/4 teaspoon salt, 1 quart water) and kaolin and pectin mixture.

After 24 hours, give available liquid diet.

Limit milk, if available, to 1 pint a day.

WHAT TO DO—ADULTS

Discontinue food for 24 hours.

After 24 hours give available liquid diet.

Symptoms

Diarrhea is the repeated passage of unformed, watery stools. As the severity increases the number of bowel movements may vary from 5 to 25 each day. The amount of material excreted from the bowels each time is usually very small and consists largely of water, sometimes mucus, and occasionally blood. If the diarrhea continues the patient may become seriously dehydrated. Infants have a very low resistance to diarrhea and it frequently becomes very severe, with marked dehydration. It can be fatal.

Treatment

As infants and children are especially susceptible to diarrhea, their treatment can best be considered separately . . .

Infants—If a baby under 1 year of age is having diarrhea, it is desirable to omit one or two feedings or give smaller amounts of feeding. If the baby is breast-fed, let him nurse as long as usual and, after the feeding give him as much boiled water as he will take. If the baby is bottle-fed dilute the milk mixture with an equal amount of boiled water and let him take as much as he wants. When feeding is refused, and diarrhea persists, offer sugar and salt solution every 3 hours for several feedings. (Sugar-salt solution: 1½ tablespoon sugar, ¼ teaspoon salt, 1 quart water.) As the diarrhea improves, gradually return the infant to his regular formula.

Children 1-10 Years—Discontinue all food for 24 hours but give the child water to drink. If diarrhea is severe, instead of plain water, substitute the sugar-salt solution and

the kaolin and pectin mixture. If the only food in the shelter is that stocked by the Federal Government, then the diet offers no problem. However, if the local community has supplemented the food stocked, after 24 hours, give a liquid diet of broth or beef stock soups, and as the patient improves a light diet of soft foods may be started. These would include such things, if available, as refined wheat cereals, soda crackers, rice, macaroni, potatoes, and jello. *Avoid* such foods as whole grain products, raw fruits and vegetables, fried meats, cream soups, and spices. Milk intake should be restricted to 1 pint a day.

Adults—Discontinue foods for 24 hours. Give water, sugar and salt solution, kaolin and pectin mixture, black coffee, or tea, as tolerated. After 24 hours, the diet described for children may be started.

Dislocations

Dislocation results from a blow, fall or sudden twisting which forces a bone out of the joint. The area around the joint may be severely damaged. Ligaments and cartilage may be torn. Blood vessels, nerves, muscles and tendons are often damaged. Fingers, shoulders and elbows are the joints most frequently dislocated.

WHAT TO DO

Dislocated Finger or Toe

Grasp the finger (or toe) . . . with one hand on either side of dislocated joint . . . slowly pull with both hands until it slips into place.

If one or two attempts fail, don't try more.

Don't **try to reduce large joint at base of thumb or great toe joint.**

Don't **pull dislocated finger or toe if an open wound is near the dislocated joint.**

WHAT TO DO

Dislocated Jaw

Wrap your thumb with gauze or cloth for protection.

Facing patient, put your thumbs in his mouth on the outer side of the last teeth of the lower jaw.

Push downward with the thumbs as the fingers push up on the tip of the chin. Warning—When the jaws snap together there is danger of the thumbs being bitten. Be sure they are wrapped sufficiently for protection.

Apply bandage (four-tailed) to give support to lower jaw. (A piece of cloth about 4 inches wide and 36 inches long is split from each end down the middle, leaving a center area which fits over the chin. Two ends can be tied around the head at the back and the other two ends tied over the top of the head.)

Symptoms

The joint may appear misshapen.

There is intense pain.

Marked swelling occurs rapidly.

Movement of the joint is extremely difficult or impossible.

Shock may occur, especially after dislocation of hip or knee.

Shock may develop after other dislocations.

More Serious Dislocations

The larger and more serious dislocations do not permit a standardized method of setting. Rest, immobilization and relief of pain are of vital importance. If available, morphine or a derivative would be normally required. Cold compresses will help relieve pain and also keep the swelling down. Give aspirin and phenobarbital.

Dyspepsia and Indigestion

Dyspepsia or indigestion may be caused by organic disease in the gastrointestinal tract and by some diseases originating elsewhere. However, the most common causes are eating too much or too rapidly, inadequate mastication, eating unusual food, eating during emotional upsets or severe mental

strain, swallowing large amounts of air and excessive smoking.

WHAT TO DO

If cause can be determined, refer to appropriate section of this manual for treatment.

Give baking soda (1/2 teaspoonful to 1/2 glass of water).

If belching is not induced and discomfort persists, have patient touch the back of his throat with his finger to induce vomiting.

Advise patient against bolting and gulping food and swallowing air.

Symptoms

Dyspepsia or indigestion may be one of several symptoms including nausea, heartburn, upper abdominal pain, a sense of fullness and a feeling of abdominal distention, stuffiness and bloating, headache, or palpitation of the heart. The symptoms occasionally occur after eating and when acute and infrequent may be of no particular consequence. Vomiting, if caused by indigestion, usually brings its own relief. Heart attacks are often mistaken for acute indigestion.

Treatment

Often with cases of acute indigestion, belching will have to be induced to lessen the patient's discomfort. Give baking soda, ½ teaspoonful to half a glass of water. If unsuccessful in inducing belching and the condition persists, have patient touch back of his throat with finger to induce vomiting which should give relief. He can have sips of water as desired but no food for several hours and should be advised against bolting or gulping food and water to avoid swallowing air. Repeated sharp eructations occur when a hysterical condition of air-swallowing persists. Often extreme excitement causes complaints of heart flutter and pain in the chest. The condition simulates certain heart attacks. The patient should be calmed and sleep induced by giving ½-grain tablet of phenobarbital.

Earache

Earache is frequently the result of an infection of the ear, which in turn is usually secondary to an infection of the nose or throat. It is most common in young children, usually as a complication of colds and sore throats, and may be the result of violent blowing of the nose which forces infectious material from the throat into the eustachian tube connected with the middle ear. An earache should not be ignored, it may be the warning of serious trouble.

WHAT TO DO

Apply ice bag or hot water bottle if available to affected ear. Try the ice bag first and if this doesn't bring relief, switch to the hot water bottle.

Apply two or three drops of ear drops from the medical kit.

Give aspirin for pain.

Don't Use Ear Drops in Ear That is Discharging Fluid.

Symptoms

Earache soon becomes intense. It is throbbing, sharp, boring and constant in character. The patient may complain of impaired hearing, a feeling of fullness in the ears and dizziness. Infants are unable to express their suffering except by crying which often amounts to agonizing shrieks. They are restless, roll the head with a boring motion, and seem to rest best when held in the lap with the affected ear down.

Treatment

Apply an ice bag or hot water bottle if available, to the affected ear for relief of pain. It is impossible to tell ahead of time which will bring relief.

Apply 2-3 drops of the eye, ear and nose medicine (from medical kit) to the affected ear. *Don't* use any kind of ear drops in an ear that is discharging fluid, as the discharge may indicate a perforation. Before using the drops they should be warmed, if possible. Heat the bottle by immersing it in warm water. It should not get too hot. Test the temperature of the drops on your wrist before using. The patient should lie down with the affected ear up. Hold the tip of the

medicine dropper at the opening of the ear canal and drop in 2-3 warm drops. Do not insert the dropper into the canal. Pull the upper part of the ear gently upward and back in a rotating motion to open the ear canal so the drops can penetrate. Have patient keep the position with his head down for a few minutes to allow the drops to move down into the ear.

Give aspirin for pain . . . and penicillin or sulfadiazine if infection is present (see instructions for use of penicillin and sulfadiazine). Infection is usually accompanied by fever and is the result of a common cold, tonsillitis, or some acute infectious diseases, particularly measles and scarlet fever. If the patient has a cold or sore throat, treatment for it (See *Common Cold)* may also tend to relieve the earache. If the earache is severe, both phenobarbital and aspirin may be given.

Eye Irritations

The most common types of eye irritations are caused by small foreign bodies (powder, sand, cinder, insect) lodged on the inner surface of either the upper or lower lid, or in the eyeball itself. When the eye moves, the object painfully scratches the eyeball or lid. The eye becomes reddened and inflamed.

WHAT TO DO

Wash your hands before touching or examining the eye.

If particle is visible in eye, remove with corner of clean handkerchief.

If not visible, grasp upper lid and lashes and pull down gently. Place a toothpick over lid and pull lid up and back over the toothpick. (This will give a clear view of the upper lid.) Remove with corner of clean handkerchief if particle is revealed.

For viewing the inside of the lower lid, place the index and middle fingers just below the lower eyelid and gently pull down on the lower lid.

Chemicals and very fine dust should be flushed out with water. Turn the head to one side. Use plenty of water, pouring from container which is held close to the nose.

Treatment

If the particle is not visible in the eye, bring the upper eyelid down over the lower and hold it there for a moment while the patient looks upward. This will cause tears to flow, often washing out the particle naturally. If this is not successful, carefully place the index and middle fingers just below the lower eyelid and gently pull down on the lower lid. Examine the inside of the lower lid and if the object is seen there, lift it out carefully and gently with the corner of a clean handkerchief or a small bit of sterile cotton wrapped around the end of a toothpick. (Moisten the cotton slightly with water before touching it to the eyelid.)

If the object is not on the eyeball or lower lid, grasp the eyelashes with the thumb and index finger, place a toothpick or match stick over the lid and pull the upper lid back and up over the stick. Look inside the lid while the person looks down. Gently remove the particle with the clean corner of a handkerchief. If unsuccessful in either removing or locating the particle, it may be flushed out by flooding the eye with a syringe (a fountain syringe is included in the medical kit) or medicine dropper with plain water or saline solution (¼ teaspoonful salt to 1 glass of boiled water cooled to body temperature). If the object cannot be removed, place a patch over the eye and secure it in place to keep from increasing the irritation. DON'T TRY TO REMOVE ANYTHING ACTUALLY EMBEDDED IN THE EYEBALL.

Very fine dust and particularly chemicals must be removed from the eye rapidly to avoid further injury. Flush out the eye with ample amount of water. It is important to cause a washing or flushing action from the part of the eye nearest the nose to the part of the eye nearest the temple. In this way the water does not wash toward the other eye. Use plenty of water and hold the container close to the bridge of the nose as you pour so the water will flush the inside corner of the eye where dust and chemicals may collect. Repeat the flushing action several times. If irritation continues, cover with a patch to prevent further irritation and to rest it.

Fever

Fever is an abnormal condition of the body marked by an increase in temperature above normal. Normal temperature is usually considered to be 98.6° F., taken orally, or a degree higher (99.6° F.) taken in the rectum. On hot day or after exercise the normal temperature may rise higher. Fever is a symptom of many kinds of diseases, especially those caused by bacteria and viruses, some communicable. Those which are not communicable usually are accompanied by a local infection and the formation of pus somewhere in the body, as a carbuncle or appendicitis.

WHAT TO DO

Determine the amount of fever.

Provide bed rest.

Give aspirin and fluids.

Give sponge bath or apply cool compresses if fever is severe.

When fever and chills occur alternately, refer to section on *Chills*.

Symptoms

Any person who complains of feeling sick should have his temperature taken. Usually fever will be accompanied by increased pulse and respiratory rate, headache, malaise, hot skin, thirst, lack of appetite, weakness, apathy and even delirium. The severity of such signs and symptoms depends, in part, upon how high the fever goes and in part upon the emotional stability and the general constitutional soundness of the patient. Young children may have temperatures of 103° F. or more at the beginning of mild infectious conditions (sore throats, colds, etc.) and with a temperature of only 100° F. be seriously ill. Therefore, the presence of other symptoms, in addition to temperature, determines the severity of the illness.

Treatment

If a person complains of feeling sick, take his temperature. Determine immediately the amount of fever. As the fever may be an indication of the onset of a communicable disease, the patient should be isolated, if possible, and kept quiet at bed rest, until the temperature returns to normal and remains normal for 24 hours. This means that his temperature should be checked at regular intervals—usually 4 times a day. Fever that is not too high or prolonged may play an important part in the curing of a disease so that concern over reducing the fever is not too important. If the temperature exceeds 102° F. in adults and 103° F. in children, give sponge baths or apply cool compresses. An alcohol rub (see instructions for use of BASIC MEDICAL SUPPLIES) will help reduce the fever and will make the patient feel better. Aspirin may be given to help reduce the fever and patient should be encouraged to drink fluids. Food should be soft and light, if at all possible, depending on what he wants. The bowels should be regulated, though no cathartic should be given if appendicitis is suspected. When fever and chills occur alternately, refer to the section on CHILLS.

Penicillin should be considered for the patient if his temperature is 103° F. or more and is accompanied by two or more of the following symptoms (see instructions for use of penicillin and dosage):

chills, particularly when followed by fever

chest pain, particularly with coughing or breathing

cough, persistent with mucus

rapid breathing, respiration 20 or more per minute

rapid pulse, 90 or more per minute

cyanosis, bluish tinge on lips and nails

sore throat, difficulty with swallowing and breathing

rash, generalized.

The Thermometer

To read the thermometer hold it by the tip and revolve it slowly toward you until you can see the height of the silver mercury. The point for normal temperature (98.6° F.) is marked by a small arrow. Before taking the temperature shake the thermometer down to 95° F. or below. Place the thermometer under the patient's tongue and leave there for at least 3 minutes. Then remove it.

To take the temperature by rectum use only a thermometer wtih a round, stubby bulb, the long thin ones may break. Shake down the thermometer and lubricate the bulb with petroleum jelly. With person lying on his side, insert bulb end gently into rectum about one inch and hold it in place for 3 minutes. Wipe it off, read and then clean it. Rectal temperature is ½° F. to 1° F. higher than mouth temperature.

To take the temperature by armpit, dry armpit, place bulb under arm and have person hold his arm firmly against his body for 10 minutes. Normal temperature by this method is ½° F. to 1° F. lower than mouth temperature. This method may be used when other methods cannot be accurately or safely used.

Cleaning Thermometer

After taking the temperature, cleanse the thermometer thoroughly, using cotton, soap and water. Moisten the cotton with cool water and soap well. Beginning at the top, rub downward with a rotary stroke with friction, getting well into the grooves of the thermometer and over the bulb. Discard the wipe.

Rinse the thermometer using fresh wipe with clear, cool water and using the same rotary stroke. Dry with a fresh cotton and put the thermometer in its case, bulb first.

Note: In cases of isolated patients with known or suspected infectious disease, the thermometer, after being cleansed, should be placed in alcohol for ten minutes.

Fractures and Splinting

A fracture is a break in a bone. It is readily identified when the broken bone penetrates the skin, or if there is an abnormal bend in the arm or leg. Otherwise, it may be extremely difficult to detect without the aid of x-ray. A fracture with an accompanying break in the skin, either from the bone puncturing from within or from a blow puncturing from without, is known as a compound fracture. If the skin has not been broken it is known as a simple or closed fracture.

WHAT TO DO

Look for bleeding and control it.

Whenever in doubt treat as a fracture.

Apply splint at the site of accident, without moving the patient.

Prevent shock, further injury and infection.

Check splint ties frequently to be sure blood circulation is not restricted.

Give aspirin and phenobarbital for relief of pain.

Treatment

Fractures should always be suspected following a severe injury produced by a blow or crushing force, and if a fracture is suspected, the injury should be treated as a fracture.

Move the patient as little as possible. If the fracture has just occurred, treat the patient where he lies. If there is bleeding, it is probably caused by the broken bone end having punctured the skin from within. The broken bone may slip back under the flesh and not be visible. It is important to check bleeding first. Apply a pressure dressing with sterile material or cleanest material available. Do not attempt to set the bone or to get it back into place and do not cleanse the wound at this time.

Treatment

After bleeding has been checked, it is important to prevent motion of the fractured bone. To do this apply a splint to immobilize the broken ends. The splint also serves to reduce pain, prevent further injury and to facilitate movement or transportation if necessary. For splints you can use almost anything that is rigid enough to give support to the fractured bone. If it is necessary to improvise, use newspapers or magazines for arms, broomsticks or boards for legs. *Make the splints long enough* to reach beyond the joints, both above and below the fracture. Pad the splints with cotton, clean rags, or whatever is available, and fasten them in place snugly with bandages or strips of some soft material. Do not fasten so tightly as to

stop circulation. Newspapers or magazines, if used, may be soft enough without padding.

Sometimes it may be necessary to straighten a limb slightly in order to apply a splint. To prevent movement of the broken bone ends while this is being done, one person should support the broken bone with his hands. One hand placed just above the break and one just below, while a second person grasps the end of the limb and exerts a strong, steady pull to straighten it.

In the case of an open fracture when a broken bone end still sticks out of the wound, it cannot be left in this position. Before trying to straighten the limb, the bone end should be checked carefully but not handled. If it appears dirty with foreign matter it should be rinsed.

Do not touch the bone with your hands. A 1% saline solution (1 teaspoon of salt to 1 pint of water) should be used to rinse the bone. Use sterile (boiled) water if possible; if not, use warm drinking water, then while bone end is still wet traction may be applied to let the bone end slip back under the skin and be in approximate alignment. *Do not* attempt to push it back in. Put on a sterile dressing, if available, to control bleeding and to help prevent infection. A clean sheet or towel can be used if necessary. Bandage the dressing in place with firm pressure. Then splint. (See *Bleeding*)

If shock is not already evident in the patient, you should anticipate it and try to prevent it. Treat him as though he were in shock. (See *Shock*)

Splinting the fracture will do much to prevent further injury. Keep patient as immobile as possible.

After the splint has been put on the injured limb, it may start to swell and cause the ties to become too tight, so they should be checked often. A tingling sensation in the limb or a throbbing below the point of the fracture is usually an indication that blood circulation has been impaired. You can test circulation by pressing lightly on tip of finger nail or toe nail. The *normal* reaction is immediate blanching of the nail bed; on release of pressure the color returns. Loosen the ties only enough to restore circulation. If there are definite signs of infection (pain, fever, redness and swelling) penicillin or sulfadiazine may be given. (See instructions for use of penicillin or sulfadiazine.)

Sometimes the safety of the injured person depends on his being moved before you have the chance to apply a proper splint.

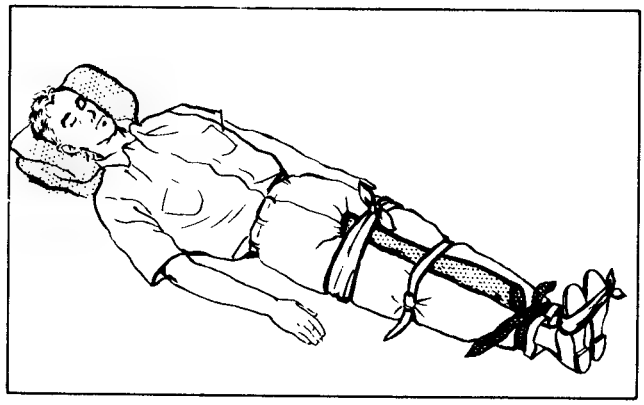

FIGURE 4.—Partial immobilization of injured leg.

If the person has a broken leg, this picture shows a simple and effective method of partially immobilizing it. Tie the injured leg to the good leg, putting padding between the legs. Be sure the binding material is not placed over the site of fracture.

FIGURE 5.—Temporary support for arm or elbow.

If the arm or elbow is fractured, these methods of supporting the arm may be used as a temporary measure until a splint can be applied. These same methods may also be used after the splint has been applied for continued support of the fractured arm.

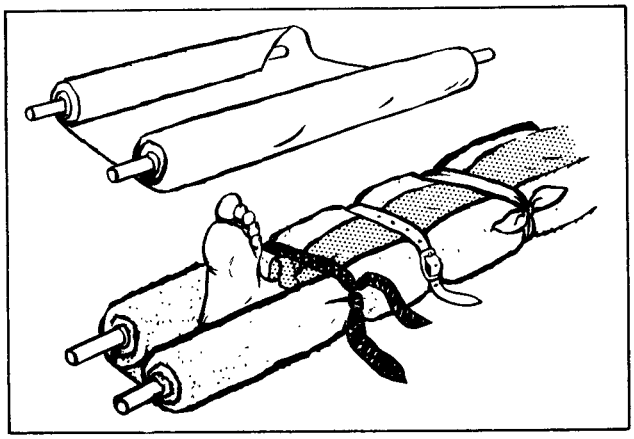

FIGURE 6.—Splint for lower leg.

Splint for lower leg

The blanket and pole splint is very effective. It provides the necessary padding as well as the strength to support the fractured limb. Be sure padding extends to the ends of the splints, particularly in the area of the groin. *Do not* place a binder over the site of the fracture.

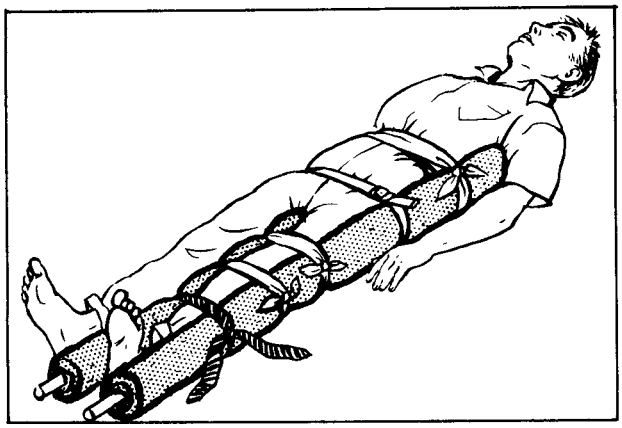

FIGURE 7.—Splint for upper leg or thigh.

Splint for upper leg or thigh

A larger blanket and pole splint is used to splint the fracture of the upper leg or thigh. A flat board may be substituted for the pole and provide an even more rigid splint. Splints are placed one on each side of the leg, extending from the crotch (groin) and the armpit to beyond the feet. Pad ends of splints between legs in the area of the groin and under arm in the armpit. Remove shoes and stockings. Check circulation. If toes are blue or foot begins to swell, loosen bandage.

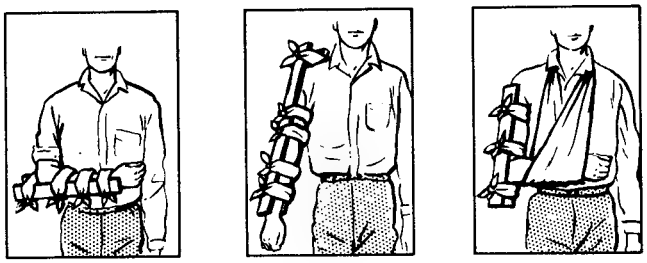

FIGURE 8.—Splints for arm.

Splint for the arm

These are correct methods of splinting a fracture of the lower arm, the upper arm, and either a multiple fracture or a fracture that does not permit bending of the elbow. Check the hand frequently after splints are applied to be sure the bindings are not too tight and have not reduced circulation.

Sling for fractured collarbone

Put the arm on the injured side in a sling. Adjust the sling so that the hand is slightly above the level of the elbow. Tie the arm snugly to the side of the body with a roller bandage or towel. *Caution:* Do not tie so tightly that circulation to the arm will be cut off.

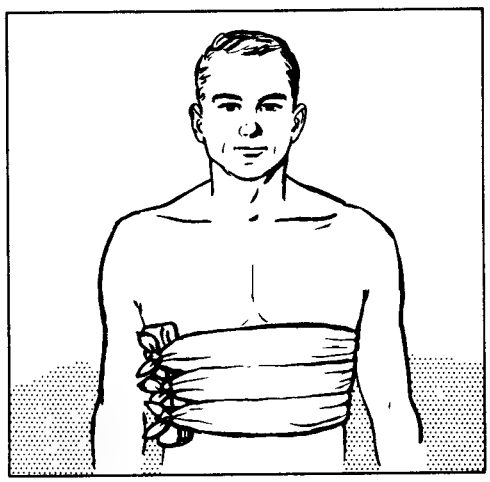

FIGURE 9.—Support for fracture of rib.

Support for fractured rib

Several smooth-type bandages are used to provide support and reduce movement when a person has a fractured rib. Put the cen-

ter of a broad bandage below the point of the fracture. Bring the two ends of the bandage around the chest and tie loosely at the side opposite the fracture. Place a gauze pad or a folded cloth under the knot. As the injured person exhales, tighten the bandage and tie it snugly. Apply a second and then a third bandage in the same manner above the first one, so that they overlap slightly and cover the site of the fracture and the area above it. If broad bandages are not available, substitute a length of sheet or a folded pillowcase. Apply tightly around the chest as the person breathes out, and then fasten from the bottom up with safety pins.

Caution: The bandage should not be so tight as to make breathing difficult.

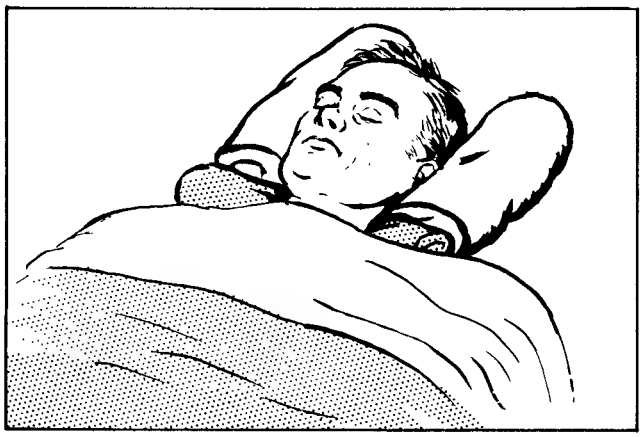

FIGURE 10.—Immobilization of head in fracture of the neck.

Fracture of the neck

Fracture of the neck is extremely serious and requires immediate, careful, attention. Movement of the fractured part can cause the broken bones to pinch or puncture the spinal cord at the point of injury. Damage to the spinal cord may cause permanent paralysis or death. The head must be held firm and steady and not permitted to move. A rolled up piece of clothing may be placed under the neck but not under the head. The neck may be arched slightly back but never forward. Keep patient completely immobilized. Combat shock but *don't* lift patient's head even to give a drink.

Fractured hand

A fractured hand is frequently a crushed hand with open wounds and swelling. Cover the hand with fluffed up sterile gauze for padding and cover with a bandage. Apply a splint, well padded on each side of the hand. Don't tie it too tightly. Splints should extend from the middle of the forearm to beyond the fingers. The injured arm should be held in a sling with the injured hand near the opposite shoulder.

Fractured pelvis

If there has been an injury in the region of the pelvis and you have any reason to suspect a fracture, treat the injury as a fracture. The patient will have to be immobilized and will have to be handled with extreme care. Bandage the knees together and the ankles together with heavy strips of cloth or a belt. The injured person will probably be more comfortable lying on his back with his knees either straight or bent, whichever he prefers.

If the patient must be moved, apply a broad bandage around his hips to help lessen the pain. Slide the bandage under the hollow of his back, work it under the hips, and tie snugly but not tightly, or fasten with safety pins. In moving patient use extreme care. He should lie face up on a door, a wide board, or a rigid stretcher.

Fractured spine

Severe injury to the back may result in a fracture or dislocation of one or more vertebrae of the spinal column. The patient may or may not have discomfort at the time. The danger of the injury lies in the possibility of damage to the spinal cord by movement of the broken bones of the spinal column. Immobilization of the patient is important and extreme care must be exercised in handling him. In any back injury in which fracture of the spine is suspected, handle the patient as though a fracture were present.

If necessary to move the patient with back injury, he should be transported lying face down on a hard surface, such as a board or door, and placed in bed, if available in the same position. His head, back

and legs should be kept in a straight line at all times. His entire body should be moved as a unit without flexing the back or neck. Every precaution should be taken to avoid motions of the spine to prevent damage to the spinal cord. Help will be necessary to lift, move, or transport the patient.

However, if the spinal fracture is believed to be in the region of the neck, the patient must be transported on his back and also put to bed on his back. The patient should be kept in bed, as quiet as possible and in the proper position. He should not be allowed to turn from side to side, to sit up, or to perform other motions which would involve movement of the injured spine.

Frostbite

Exposure to cold, particularly when associated with dampness and wind, is apt to cause local freezing or frostbite of exposed body surfaces. The parts of the body most susceptible are: nose, ears, chin, cheeks, hands, and feet. Where there is gangrene, body tissue and sometimes bone may be permanently destroyed and the injured part may require amputation. Persons with severe frostbite should be considered for priority movement from the shelter when possible.

WHAT TO DO

Rapidly thaw frostbitten part of body—

Have patient hold affected part next to warm part of his body or someone else's body——or

Place frostbitten part in lukewarm water ——or

Cover affected area with blankets or clothing, etc.

Give hot fluid, coffee or hot tea if available.

Handle affected part with great care and gentleness.

Give aspirin for pain and phenobarbital if pain is severe.

WHAT NOT TO DO

Don't Rub the Affected Part.

Don't Apply Ice or Snow.

Don't Use Hot Water.

Don't Use Hot Water Bottle or Heat Lamp.

Don't Disturb Blisters if They Develop.

Don't Use Ointment or Wet Dressing.

Symptoms

The symptoms of frostbite vary with the severity of the injury. The frostbitten part appears white or grayish white and is usually not painful, but is numb and stiff. As the tissues thaw, feeling returns and great pain may be experienced. The thawed part becomes red and swollen and blisters may develop.

Treatment

Treatment is directed primarily toward the prevention of further damage to the frozen area as well as the preservation of all living tissue.

Contrary to Popular Belief, Rapid Thawing of Tissues Frozen From Short Exposures Results in Less Loss of Tissue Than Does Slow Thawing . . . Don't Rub With Ice or Snow.

The treatment is directed toward the rapid thawing of the frozen tissue. To thaw a frostbitten part, the patient should put it next to a warm part of his body or someone else's body. Have patient lie down with feet slightly elevated (about 12 inches above head). Cover him with blankets or clothing. Keep him warm and give him hot coffee or tea and oral electrolyte solution for shock (1 teaspoon salt, ½ teasopoon baking soda, 1 quart water). A hand or foot may be placed in lukewarm water. Avoid extreme heat which will cause greater tissue damage.

Don't Use Hot Water, Hot Water Bottles or Heat Lamps

Don't Place Victim Close to Hot Stove or Furnace.

Once affected fingers and toes are rewarmed, encourage the patient to exercise them to restore normal circulation. An arm or leg recovering from frostbite should be placed in an elevated position and kept at rest.

If injury has been sufficient to cause blistering, the injured area should be covered with dry, sterile gauze dressing, not too tightly. Severe pain which generally accompanies thawing should be controlled by giving aspirin. ***Don't Disturb Blisters if They Develop.***

If a large area of the body has been frozen, there is great likelihood of shock developing soon after the frozen tissue has thawed. Treatment for shock should be simultaneous with treatment for frostbite.

Immersion foot results from poor circulation when associated with prolonged exposure to wet and cold. Advanced cases are characterized by swollen, painful, purplish-red feet in which the overlying skin is blistered and in places may be rubbed off or even gangrenous. Less serious injury is indicated by the absence of blisters and dead skin.

Treatment is the same as for frostbite but extreme care must be taken to prevent infection.

Headache

Headache is a frequently encountered symptom but is one of the least informative and its causes are numerous. The presence of fever may produce headache, or it may be caused by anything from emotional upset, anxiety, normal fatigue, or hunger, to brain tumor. Headache often marks the beginning of an infectious disease. Some of the common causes of headache are digestive disturbance, common cold, influenza, or other acute communicable disease, eye strain, sinus trouble, migraine or hypertension.

WHAT TO DO

Take patient's temperature.

Give aspirin and phenobarbital if pain persists.

Have patient rest for a few hours.

Put patient to bed if headache persists.

Apply cold compresses to forehead and back of neck.

Treatment

Many headaches are mild and respond well to appropriate treatment regardless of their cause. Aspirin will usually bring prompt relief. It is important that immediately after taking the aspirin the person should rest for a few hours, if possible. If the headache persists the person should go to bed to get complete rest. Cold compresses may be applied to the forehead and back of the neck. The average headache will soon be relieved with these procedures. The temperature of a person complaining of a headache should always be taken because the combination of headache and fever suggests communicable disease.

Headache will probably be very common among shelter occupants as they are quite often brought on by worry and tension. If these headaches persist and are not relieved by aspirin, phenobarbital tablets 3 or 4 times a day should be considered. Caution should be exercised not to use aspirin or phenobarbital indiscriminately nor to waste it on the milder type of headaches, unless, of course, there is ample supply.

Persons subject to migraine headache usually carry the medication which has been prescribed for them. If the patient knows he is experiencing a migraine headache, and is without his medication, he may be given 3 aspirin tablets every 4 hours followed by 1 or 2 cups of strong black coffee, if available. Aspirin should be discontinued after 12 hours. Most sufferers of migraine headaches will be more comfortable partially sitting up in bed with their eyes covered to keep out the light.

Head Injuries

Head injuries are common in most disaster situations. Soft tissue injuries of face and scalp are most obvious, but intracranial injuries should be suspected in any of the following circumstances: any evidence of trauma to the head, including lacerations and contusions . . . unconsciousness or history of unconsciousness . . . seizures or localizing neurological symptoms. (See *Convulsions*) Diagnosis will have to be based on the

type of injury plus signs and symptoms evident.

WHAT TO DO

Cleanse and dress wound.

Patient is unconscious, position him to permit secretions to drain and keep airway open.

If patient is conscious, with open wound anywhere, give penicillin or sulfadiazine.

Give oral electrolyte solution.

Keep patient quiet and at bed rest.

Symptoms

The signs or symptoms of increased intracranial pressure may be headache, vertigo, delirium, convulsions, vomiting, contracted or unequal pupils, slow pulse, rapid respirations and elevated blood pressure which may precede unconsciousness, slow respirations, rapid pulse, drop in blood pressure, and high fever.

Treatment

If patient is unconscious (see *Unconsciousness*) cleanse and dress the wound and position the patient to permit drainage of secretions to prevent aspiration, and to promote a free air passage. When patient regains consciousness, penicillin or sulfadiazine may be given to prevent infection. Keep patient quiet and at bed rest. Sedation may be used cautiously. Phenobarbital may be given for restlessness if patient is conscious and his respirations are normal. Use of phenobarbital should be discontinued if patient's respirations go below 12 per minute or become shallow. Oral electrolyte solution (1 teaspoonful salt, ½ teaspoonful baking soda, 1 quart water) in small amounts, may be given hourly.

For minor head wounds, cleanse and dress. It is not necessary to confine patient to bed rest.

Heart Failure

The diseases or abnormal heart conditions which cause failure are numerous, and their diagnosis requires a physician. It is the result—the heart failure—not the cause which you should be prepared to recognize and to treat.

Some people will be suffering from various kinds of heart ailments before entering the shelter. These people should have their condition identified at time of entry. If they are taking medicine of any kind regularly they may have a supply of the medication with them. Without doubt, some will have an insufficient supply for the anticipated two-week period.

WHAT TO DO

Administer his medication if he has it with him.

Put patient to bed in most comfortable position.

Keep bowels regulated.

Reassurance and rest are important.

Give phenobarbital for restlessness.

Allow patient a soft diet (salt-free) and about 1 quart fluids per day.

DON'T give one person's medication to another until it has been cleared by a physician.

Symptoms

Heart Failure with Pain

Acute (painful) heart failure is caused by disease of the coronary arteries which carry blood to the heart itself. The pain in the chest is severe, cramping, or crushing in nature; located under or to the left of the breastbone or in the upper middle part of the abdomen. Frequently the pain runs down the left arm—sometimes both arms. It is not influenced by breathing and is often associated with indigestion and vomiting. The symptoms of shock may be present: cold sweat, paleness, lips sometimes blue, pulse thready and weak. The patient often gives a history of twinges of pain in the same location after physical exertion. Generally the patient is past the age of 40.

The heart itself can give rise to discomfort in the chest without it necessarily

meaning that something is seriously wrong with the heart. It's important to bear in mind that only a physician can diagnose the seriousness of chest pains. There are many conditions not related to the heart that can cause pain or discomfort in the chest. Among the disorders which may be confused with anginal heart failure are:

Gallstone colic with a sharp pain, rather than "crushing", located in the right upper abdomen radiating backward below the right scapula.

Perforated stomach ulcer with pain in the mid-upper abdomen, just beneath the breastbone, which causes the patient to "double over" and is soon followed by tenderness on pressure in this area and tenseness or rigidity of the abdomen.

Pleurisy pains occur only on inspiration and are knifelike, sharply localized and usually to the side of the chest.

Treatment

Heart Failure With Pain

Put patient to bed in most comfortable position. If available, break an amyl nitrite perle in cloth for inhalation, and if there is no relief in 20 to 30 minutes, it may be coronary thrombosis which is sometimes preceded by a history of angina pectoris or primary hypertension. If available, give morphine (¼ gr.) and if no relief, repeat morphine in 20 to 30 minutes, then every 4 hours if severe pain persists and respirations do not go below 14 per minute. If morphine is not available give aspirin and phenobarbital. If patient is constipated and this condition seems to aggravate him give cascara sagrada as directed or a milder laxative such as milk of magnesia, if available. Give phenobarbital as required to control restlessness. Fear and apprehensiveness will retard recovery and make reassurance and understanding essential parts of the treatment. Allow the patient a soft diet, preferably salt-free, and about 1 quart of fluids per day.

Symptoms

Heart Failure Without Pain

One of the first smyptoms of heart failure, especially in sedentary individuals, is a history of inability to breathe lying flat; the head and shoulders have to be elevated to facilitate breathing in bed. A similar symptom, labored breathing or shortness of breath, is associated with physical exertion, with or without expectoration of bloody or frothy mucus, but usually accompanied by edema (swelling) of the ankles, legs, and abdomen. Often another accompanying symptom is cyanosis, a blueness of the skin, especially in the lips, ears, and fingernails which indicates a damaged heart unable to carry on its job of pumping blood satisfactorily.

Treatment

Heart Failure Without Pain

Give medication if person has a supply with him but before administering the medication read the label on the bottle first and give the patient only the prescribed dose. The most important thing to do is to give both the heart and the patient as much rest as possible. Absolute bed rest is essential. The patient may be more comfortable partially sitting up, particularly if shortness of breath accompanies the heart attack. When he is able to eat allow him to have a soft diet (preferably salt-free) and about 1 quart of fluids to drink each day. His bowels should be regulated with what is available to produce a movement each day. If patient is restless and unable to sleep he may be given 1 or 2 phenobarbital tablets (½ gr.) at night. The patient's fear and apprehensiveness is a real deterrent to his recovery. He will need all the reassurance and understanding you can give him. Stay with him, if possible, or have someone else stay.

Heart, Irregularities in Rate

Skipped beats and palpitation or fluttering heart beats are not uncommon and are more likely to occur when a person has overeaten, smoked to excess, or is emotionally excited or depressed.

Premature heart beats (extrasystoles) are a common occurrence. Usually they

have no serious significance other than the discomfort or anxiety they may cause when they appear. They may appear without apparent cause although in some people smoking, coffee, alcohol, or digestive disturbance may serve to bring them on. The person may experience a feeling that something is "turning over" in the chest. There may also be a slight choking sensation. These symptoms are caused by an irregularity in the rhythm of the heart beat, and by a beat coming too soon, or prematurely. The result is a momentary skip followed by an extra strong beat. The irregularity in rhythm can often be detected by feeling the pulse in the wrist. Usually no treatment is necessary other than to reassure the person and to make him comfortable. A glass of cold water will usually make him feel better.

Rapid beating of the heart (120 or more times a minute) coming on suddenly with discomfort in the chest often in the form of fluttering sensation, dizziness, a feeling of faintness or actual fainting may occur. This is not serious. Make the person comfortable and reassure him. The condition will probably subside without anything else being done. Holding the breath and bending forward may help to stop this condition.

In all cases where heart involvement is suspected, keep the person as quiet as possible. Exertion or movement puts an added burden on the heart. Give phenobarbital for restlessness.

Heat Cramps
Heat Exhaustion

While the causes are essentially the same, symptoms and treatment of heat cramps and heat exhaustion on the one hand, and heat stroke on the other, are quite different. Heavy muscular work, under the direct rays of the sun or in an excessively high temperature will cause one person to suffer from heat stroke, another from heat exhaustion, and still another heat cramps. It is difficult to predict how a person will react to excessive heat. Heat stroke is not to be confused with the less serious heat exhaustion and heat cramps.

WHAT TO DO

Have patient lie down with head and shoulders slightly lower than rest of body.

Loosen the clothing.

Place blanket over him.

Give warm coffee or tea, if available.

Give salt solution, as tolerated.

Massage cramped and painful muscles.

Keep patient at bed rest until fully recovered.

Symptoms

Heat cramps may be regarded as the first stage of heat exhaustion. It is characterized by very painful muscular cramps, involving the muscles of the legs, arms, and abdomen. In addition there may be mild symptoms similar to those of heat exhaustion such as vomiting, cold sweat, and weak pulse. The painful spasms may continue for as long as 24 hours, rarely longer.

Heat exhaustion usually starts with weakness, headache, blurred vision and dizziness, sometimes associated with nausea and vomiting, followed by inability to stand. The skin is usually ashen or pale, cool, and wet with profuse perspiration. The temperature is either normal, or more often sub-normal. The pulse rate is weak and respirations are shallow. There may or may not be painful muscle cramps.

Treatment

Treatment of heat exhaustion and heat cramps is the same and must be clearly distinguished from heat stroke. The purpose of the treatment is to restore salt balance, stimulate the patient, restore circulation, and raise temperature to normal if it is sub-normal. The patient should be removed to a comfortable place to rest. His clothing should be loosened and his head and shoulders should be slightly lower than the rest of his body. If patient is cold or shows signs of shock, wrap him warmly in blankets and give warm liquids such as coffee or tea if available. Treat pain caused by cramping muscles by massage and hot water bag. Give salt solution as tolerated (1 teaspoon of salt, 1 glass of water), a

glassful every half-hour for 3 to 4 hours. Keep the patient at bed rest until fully recovered.

Heat Stroke

Heat stroke is extremely serious and requires immediate treatment. It is caused by a prolonged exposure to excessively high temperature or the direct rays of a hot sun, combined with high or low humidity and lack of air circulation. Over exertion in a hot place, not necessarily in the sun, can also contribute. Persons over 40 years of age, after physical exertion, especially if they are not accustomed to it, are the persons most likely to be affected by heat stroke.

It is difficult to predict how a person will react to excessive heat. Exposed to the same circumstances and conditions, one may suffer heat stroke, another may suffer heat exhaustion, and still another heat cramps. Heat stroke is not to be confused with the less serious heat exhaustion and heat cramps.

WHAT TO DO

Remove patient to coolest part of shelter.

Remove his clothing and lay him in a comfortable position.

Sponge his body freely with water or alcohol.

Reduce his temperature to 102° F. or less.

Place damp sheets over patient to hold temperature at 102° F. or less.

Give salt solution as soon as it can be tolerated. Encourage taking a glassful every half-hour for 3 or 4 hours.

If temperature rises above 102° F. resume sponge treatment.

Keep patient at bed rest until fully recovered.

Symptoms

Headache, weakness, dizziness, irritability, and vision blurred by a red or purplish haze are the preliminary symptoms of heat stroke. There is usually a fever of 105° F. or higher. The skin is dry, red, and hot, with no perspiration, and the pulse is full and strong. Respirations are noisy, like snoring. There may be convulsions and projectile vomiting with loss of consciousness.

Treatment

The purpose of the treatment is to reduce the fever and to restore salt balance. Remove the patient to the coolest part of the shelter. Remove his clothing and lay him in a comfortable position. Put an ice bag (if available) or cool compresses on his head and neck. Sponge his body freely with alcohol or cool water while an assistant fans the patient. When his temperature has been reduced to 102° F. or less, stop efforts to reduce temperature and observe him for 10 minutes. If the temperature rises start the sponge treatment again. To keep the temperature at 102° F. or less, damp sheets may be placed over the patient while someone fans him. Evaporation will help reduce his body temperature. As soon as the patient is able to drink, give him salt solution (1 teaspoonful salt to 1 glass water). ***Don't Give Stimulants Such as Coffee or Tea.***

In severe cases, a cool or cold water enema may be given to reduce the body temperature.

Hemorrhoids (Piles)

Hemorrhoids are very common. They are enlarged veins surrounding the last inch or so of the rectum and its outlet, the anus. Hemorrhoids may be internal which cannot be seen unless forced through the anus by straining, or they may be external and visible. Presumably they result from conditions that produce rectal venous congestion, such as constipation, pregnancy, rectal disease, diarrhea, and portal hypertension.

WHAT TO DO

Replace protruding hemorrhoids, if possible.

Apply hot compresses to relieve pain.

Apply cold compresses if bleeding persists.

Give a laxative if necessary for constipation.

Symptoms

Hemorrhoids may be small, or they may become quite large, the size of an almond or even larger. They may be fairly painless or very painful. Internal hemorrhoids are multiple, soft, purplish and irregular in shape. Bleeding is the principal symptom. Prolapse (protrusion of tissue from rectum) is possible and is precipitated by straining at stool and accompanied by pain. Leakage of mucus from the anus and itching are frequent complications. Hemorrhoids are the most common cause of rectal bleeding. The blood is bright red. Internal, protruding hemorrhoids that become engorged and inflammed and cannot readily be pushed back into the rectum, may become a very serious problem.

External hemorrhoids appear as small, rounded, purplish tumors which, unless thrombosed, are soft and seldom painful. Thrombotic hemorrhoids are often multiple, nodule-like and painful. They appear suddenly and enlarge rapidly. Frequently, the pain ceases within 3 days and the mass is resorbed in 3 to 4 weeks.

Treatment

Emergency treatment in the shelter consists in replacing internal hemorrhoids which are protruding from the anus and in taking such measures as are possible to relieve pain and discomfort. To replace protruding hemorrhoids, lubricate the area liberally with petrolatum jelly, and as gently as possible push them back into the rectum. Application of hot compresses will help relieve pain. A laxative may be needed for constipation. Acute bleeding of hemorrhoids usually ends spontaneously; if not, cold compresses are helpful.

If acute bleeding or pain cannot be controlled, these patients should be given priority for treatment as soon as possible following shelter habitation.

Small, uncomplicated hemorrhoids do not require any treatment beyond efforts to correct the underlying cause. Although sometimes no such cause is apparent, bowel-training regimen to correct abnormally frequent or infrequent bowel habits would be beneficial. However, in the shelter with limited medication and diet, it may be impossible. The patient should be cautioned against straining and should avoid trauma when cleansing the anal area after bowel movements.

Hernia (Rupture)

Hernia is the protrusion of a portion of the abdominal contents, usually a section of intestine, into a weak place in the wall of the abdomen. Rupture may be present in any part of the abdominal wall but is usually located in the inquinal region or groin. Less frequently, a hernia is at the navel (umbilical hernia). Hernia may appear in some persons following a disaster as they tend to over-exert themselves, causing severe muscular strain from lifting, pushing, or jumping. Strenuous activities increase pressure within the abdomen and thus force out a section of abdominal contents through an existing weak spot.

WHAT TO DO

Have person lie flat on his back with knees drawn up. In this position the swelling is more likely to disappear.

If this is unsuccessful, have the person take the knee-chest position. Turn over on his abdomen and bring the knees up under the chest so the buttocks are raised. He should remain in this position for a few minutes to see if the hernia will be reduced. If hernia is reduced, put an improvised truss on the patient.

If unable to reduce the hernia, have the person again lie on his back and apply cold compresses to the site of the rupture. Patient should be kept as quiet and as still as possible. Give aspirin for pain.

WHAT NOT TO DO

***DON'T* try to push the hernia back into place with the fingers. This could cause damage and should be attempted only by a physician.**

***DON'T* give any laxative or cathartic unless approved by a physician.**

Symptoms

A sharp pain is felt at the moment of protrusion accompanied by a feeling of something "giving way" at the site of the hernia. Nausea or vomiting may occur at this time. It is also possible that the herniation may occur with little or no pain or discomfort. The person may first become aware of it by noting the appearance of swelling at the site. The swelling is tender to the touch and may range in size from a marble to a fist. The swelling in umbilical hernias appears at the navel. In inquinal hernias the swelling appears in the groin on the affected side.

Treatment

Hernias are usually reducible. Have the patient lie flat on his back with his knees drawn up over his chest. In this position the section of abdominal contents is more likely to return to the abdomen and reduce the hernia. Should this prove unsuccessful, have the patient turn over on his abdomen (unless it is an umbilical hernia) and bring the knees up under the chest so the buttocks are raised. He should remain in this position for a few minutes. If successful in reducing the rupture, an improvised truss with a supportive bandage should be put on the patient. One may be made from a block of wood, a flat piece of metal, or any similar object available which is about an inch thick. Cover the block with a thick layer of cotton and place it directly over the protruding part. A gauze bandage may then be applied to hold it firmly in place.

Should efforts to reduce the hernia fail, have the person again lie on his back and apply cold compresses to the site of the hernia. Even if the hernia is reduced it is well to apply cold compresses. The patient should be kept as quiet and as still as possible. He should be cautioned against any sudden movements or lifting, even moderate, weights. He should eat only soft foods (if available) and drink ample amounts of fluids. Aspirin may be given for pain.

Itching

Itching (pruritus) is a disagreeable symptom usually accompanying diseases of the skin (especially scabies and ringworm), infestation with lice, prickly heat, and skin irritations by poisonous plants such as poison ivy. Itching is also a symptom of many allergies resulting from contact, food, drugs, etc. It may also be the sole sign of a serious systemic disease and as such demands careful evaluation.

Scabies, a transmissible, parasitic skin infection is seldom seen in good hygienic environment. However, under disaster conditions and dislocation it may achieve epidemic proportions.

Ringworm of the scalp is common in children, especially in cities, and is highly contagious and may become epidemic.

WHAT TO DO

Determine cause, if possible, and correct it.
Look for obvious causes.
Apply solution of baking soda and water.
Discontinue any new medication being used.
Consider giving phenobarbital.

Symptoms

An itching sensation, generalized or localized, which the patient instinctively attempts to relieve by scratching, is normally moderate and short lasting. When it is persistent and troublesome it is pathologic. Itching may be the sole sign of serious systemic disease, such as diabetes, nephritis, liver and gall bladder disease, cancer, leukemia, or gout. Pregnancy, menopause, and psychogenic states (nervous conditions) may also cause itching.

Scabies is characterized by superficial burrows and itching which ordinarily is more intense at night. The inflammatory lesions usually occur on the body and seldom on the face.

Treatment

Determine the cause, if possible, and correct it. Look for obvious causes. Cleanliness

is important and towels, etc., used by the patient should not be used by anyone else. Disposable tissues, if available, would be preferred. A solution of baking soda (3 teaspoonsful to 1 glass of water) if applied may be helpful. A thin paste made by mixing baking soda and water may be patted on the skin and allowed to dry.

Drug sensitivity often aggravates itching of the skin so any new medication in use should be discontinued if possible. Drugs such as salicylates, barbiturates and penicillin, lotion and ointments may produce a reaction. Woolen and rough-surfaced clothing should be avoided. If barbiturate medication has been ruled out as a cause, give phenobarbital, ½ gr. tablet every 4 to 6 hours. (See also *Allergic Reactions* and *Athlete's Foot).*

Jaundice

Jaundice is a term used to describe the yellowish discoloration of the whites of the eyes and skin which occurs when bile is absorbed into the blood instead of passing from the liver through the bile duct into the intestine. Jaundice is a symptom of several diseases and is not a disease itself.

One such disease, catarrhal jaundice or infectious hepatitis, is caused by viruses introduced by fecally contaminated food or water and may occur in epidemics. Serum hepatitis follows such procedures as blood transfusions, intravenous plasma therapy, and use of unsterile instruments in blood work. Although this virus may be in the blood stream long before onset of the disease, it is not recoverable from the stool as in infectious hepatitis and there is no cross immunity with that condition. Jaundice also accompanies liver and gallbladder diseases, gallstones, malaria and certain blood diseases.

WHAT TO DO

Determine cause if possible.
Keep patient at bed rest.
Keep bowels open.
Isolate, if possible.

Symptoms

The most common type of disease which accompanies jaundice is acute infectious hepatitis "A", which occurs sporadically or in epidemics and is caused by viruses introduced into the body by fecally contaminated food or water. Young people are most frequently affected. Its incubation period is from 2 to 6 weeks. The onset is abrupt, with loss of appetite, nausea, fever and malaise. About 5 days after onset jaundice appears and generalized itching occurs.

A similar type is inoculation (or serum) hepatitis "B", which follows such procedures as blood transfusions and the use of unsterile instruments in taking blood counts and in drawing blood. The symptoms are very similar to infectious hepatitis. It is more likely to occur in persons over 30 years of age.

A sudden colicky pain in the upper right side of the abdomen, with muscle spasms, fever and jaundice indicate obstruction by stones. With elderly persons, jaundice of steadily increasing intensity, suggests cancer.

Treatment

If possible, first determine the nature of the disease causing the jaundice. The patient should be kept quiet and at bed rest and the bowels should be kept open. Persons suspected of having hepatitis should be isolated. Without laboratory facilities, it is impossible to rule out infectious hepatitis and confirm a diagnosis of serum hepatitis which is not infectious; therefore, all suspected cases should be isolated. Treatment is alike for both types of hepatitis but from the standpoint of shelter facilities quite unsatisfactory, since a minim of 3 weeks bed rest is advisable, wtih a diet rich in protein and carbohydrate but no need of fat restriction. Relapse is fairly common so patients should be considered for priority removal from shelter.

Kidney and Bladder Infections

Pyelonephritis and pyelitis are acute pyrogenic (pus producing) infections of the kidney pelvis. Infection occurs by way of

the blood stream or lymphatics from foci elsewhere. Infection is especially likely to occur in diabetics, females in childhood, or during pregnancy.

Cystitis, inflammation of the urinary bladder, is rarely a primary condition. It is usually secondary to an infection of the kidney, prostate, or urethra.

WHAT TO DO

Keep patient at bed rest.
Force fluids (no coffee).
Give sulfadiazine and penicillin if indicated.
Give aspirin for pain.
Give phenobarbital for restlessness.

Symptoms

Symptoms are extremely variable in severity. Usually onset is rapid and characterized by chills, fever, abdominal pain, backache, evidence of toxemia, and often nausea and vomiting. Urinary output may be decreased. Irritation of the bladder by infected urine may result in frequent and urgent urination with pain or burning sensation. The urine has a cloudy appearance from the presence of pus and occasionally blood is present. The abdomen may present some degree of rigidity.

Treatment

Complete bed rest. Both sulfadiazine and penicillin may be given. (See instructions for use of sulfadiazine and penicillin.) Fluids should be forced to maintain an adequate urinary output of at least a quart per day. Give phenobarbital for restlessness and aspirin for pain.

Muscular Pains

The muscles are subject to many ills (backache, lumbago, Charley-Horse) caused by physical or emotional strain, direct violence, exposure to elements, and sometimes to no known cause. Aching pains in the muscles, small of the back, and joints are usually the early stages of many acute diseases or conditions.

WHAT TO DO

Urge rest.
Apply heat and gentle massage.
Give aspirin for relief of pain.

Symptoms

Muscle or ligament strain is usually easy to diagnose as there will be a history of unusual or heavy work followed by sudden pain. Muscular rheumatism of the chest wall may be either acute or chronic, mild or severe. Common causes are exposure, overfatigue, strain, or overuse of muscles. It may be located in the shoulders and upper part of the back, between the ribs, in the neck, or in the chest. The pain is usually sharp, knifelike and strikes suddenly although in a few moments it may completely disappear. Backache associated with menstruation and pregnancy is common and readily recognized.

Treatment

If the pain is severe, rest is required with hot applications and gentle massage. Patient should be kept warm, wrapped in blankets, if possible, to cause sweating. Aspirin, 1 or 2 tablets 3 or 4 times a day, should be given for relief of pain. Also phenobarbital given for sedation followed by aspirin for pain is more effective in the relief of pain in severe cases. For sharp, stabbing pains in the muscles between the ribs, relief may be afforded by tightly binding the chest with a wide bandage or a piece of cloth.

Nausea and Vomiting

Nausea and vomiting are common symptoms which may be due to any number of causes, e.g., mild stomach upset, food poisoning, the beginning of a communicable disease, appendicitis, radiation sickness, pregnancy, or severe shock or fright. The symptoms accompany the onset of almost any infectious disease in children and are present in adults mainly when the infectious process involves the gastrointestinal tract, liver or meninges.

WHAT TO DO

If cause can be determined, refer to appropriate section of this manual for treatment.

Provide bed rest for patient.

Give oral electrolyte solution as tolerated.

If vomiting persists encourage patient to take as much fluid as possible (small amounts at a time) to prevent dehydration.

Start soft foods (if available) after liquids have been retained for 24 hours.

Symptoms

Nausea may be accompanied by a feeling of faintness, weakness, vertigo, headache and sweating. It may be caused by any condition that increases tension upon the walls of the stomach. It may follow exposure to unpleasant odors or the distention of the stomach from overeating.

The force and frequency of vomiting, the amount and the regularity of vomiting are helpful in determining its cause. For example, forceful vomiting without nausea suggests increased pressure within the skull due to brain injury. Vomiting accompanied by fever and headache suggests onset of a communicable disease.

Treatment

Nausea and vomiting are symptoms and it is important to determine the cause. If the cause can be determined, refer to the appropriate section of this manual.

Vomiting, if caused by indigestion, usually brings its own relief. The patient should remain lying down and nothing should be given by mouth until vomiting stops. Then he may gradually be given water, oral electrolyte solution (1 teaspoonful salt, ½ teaspoonful baking soda, 1 quart water), tea or fruit juices as tolerated and if available. If vomiting persists for 2 days or more, dehydration will result and the patient should be encouraged to take as much fluid as possible.

For nausea and vomiting due to dietary indiscretion, a mild cathartic and rest for the stomach is all that is needed (cascara sagrada tablet, see instructions for its use).

Nosebleed

Some nosebleeds are the result of injury or an underlying disease. There are several disorders in which nosebleed is encountered, e.g., acute infectious diseases, high blood pressure, heart, kidney and liver conditions. Some people, particularly the young, develop nosebleed following strenuous activity, colds, or exposure to high altitudes. The bleeding is usually more annoying than serious.

WHAT TO DO

Have person sit with head thrown back.

Pinch the nostrils together gently, the pressure helps stop the flow. It may be necessary to pack the bleeding nostril with gauze and then pinch.

Release pressure gradually.

Apply cold compresses to back of neck or over nose.

If bleeding persists, plug the bleeding nostril with wad of loosely rolled up gauze. Leave part of gauze extending from nose for easy removal later.

If bleeding is not controlled in half hour, repack the nostril and leave the pack in place for 12 to 24 hours.

Pain

Pain anywhere in the body is a symptom which only the patient can describe. It may be dull or sharp, steady or intermittent, cramping or merely irritating. The cause of the pain may be determined from its

location and severity. This makes it difficult to determine the cause in infants and young children who are unable to describe the pain.

WHAT TO DO

Locate the pain area.

Determine its severity.

Determine the cause, if possible.

If cause can be determined, refer to the appropriate section of this manual for treatment and care.

When cause cannot be determined, apply cold compresses to area of pain. If cold compresses do not provide relief, switch to hot compresses as a possible alternate.

Give phenobarbital with aspirin for severe pain.

Symptoms

Pain itself is a symptom and the first thing to determine is its location, severity and cause. If you can do this, then you may be able to refer to the appropriate section of this manual for specific treatment and care. Pain is usually either dull or sharp, continuous or intermittent. When lying still, the patient may have no control over the presence of the pain. Another patient, when he moves some part of the body, may experience pain in specific locations and the pain may stop when the movement is stopped. Tenderness, however, is experienced only when the affected area is touched and some degree of pressure is applied.

Treatment

Pain in the chest can be serious. Accompanied by fever, coughing and difficulty in breathing, it may indicate pneumonia or pleurisy. A cloth binder pinned securely around the chest may make the person more comfortable. A hot water bag (if available) will also prove helpful. If the fever goes up to 103° F. or above, the administration of penicillin should be considered. (See instructions for use of penicillin.)

If chest pain is accompanied by pain in one or both arms and signs of shock are evidenced, heart trouble may be indicated. Keep person lying down, or if he is having difficulty in breathing, prop him up in a comfortable position where he may breathe more easily.

Pain in the abdomen may be caused by a variety of conditions such as indigestion, food poisoning, constipation, heat cramps, spastic colon, acute appendicitis and heart attack. If the patient is pregnant and there is vaginal bleeding, it may be the first sign of threatened abortion (miscarriage). (See appropriate section of this manual.) Pain is a warning that trouble is present, and it should not be ignored. Depending on the cause, abdominal pains may represent a real emergency, but the cause may be difficult even for a physician to determine.

If there is tenderness in any part of the abdomen, nausea or vomiting, keep the patient lying down. Allow sips of water, if desired, but do not give food. DON'T GIVE A LAXATIVE, CATHARTIC OR PURGATIVE.

There is no general symptomatic treatment for abdominal pain because treatment depends upon the specific disease or condition causing it.

Poisoning

Most accidental poisonings involve children while the majority of adult poisonings are either attempted suicides or overdoses of sedatives—accidental or otherwise. Hopefully, there will be very few poisonous materials in the shelter. Those poisons which may be necessary for sanitation or other purposes should be kept under lock and key or, at least, out of reach of small children.

WHAT TO DO

Quickly identify specific poison, if possible. Dilute with water.

Induce vomiting*

Give antidote, if known—if not, give universal antidote, if ingredients are available:

4 tablespoons burned toast (charcoal)

2 tablespoons strong tea (tannic acid)

2 tablespoons milk of magnesia.

Mix well and give 1 tablespoon of this mixture with 1 pint of water.

Exception—

In acid or alkali poisoning, or kerosene, gasoline and cleaning fluid poisoning, dilute and neutralize, but DON'T induce vomiting. If available, give a protective agent such as milk, olive oil, or egg white.

Symptoms

Poisoning should be suspected with any sudden, severe illness accompanied by vomiting, bloody diarrhea, severe abdominal pain, prompt collapse and subsequent unconsciousness. Prolonged deep sleep from which the person cannot be aroused (or only partly aroused) may also be the result of poisoning.

Treatment

Identify the specific poison, as quickly as possible—If the patient is a child, the parent may be able to identify the poison, or at least to contribute information which may help identify it. The circumstances at the time and significant objects or materials in the immediate vicinity are important clues. The parents may have had the forethought to bring the poison container, in which case the antidote would most likely be printed on the label. Examination may show stains or burned areas on the lips or on the inside of the mouth. Unusual odors on the breath may supply the clue for identification. It is not always possible to quickly identify the specific poison.

Dilute with water—If poisoning is suspected, quick action is vitally important. The poison must be removed from the stomach before it is absorbed. Dilute the poison quickly with water. Milk, if available, is good, as it delays absorption of many poisons but water is usually more readily available. Use either or both. Give as much as possible—4 glasses or more for adults and as much as a child will swallow. *Don't* try to give fluids if the person is unconscious, insert a stomach tube, if available, and introduce at least a pint of water, siphoning it off, and repeating the procedure until washings are clear. *Caution* . . . The stomach tube must *not* be used when strong acids, caustic agents or ammonia have been swallowed, for fear of perforating the esophagus or stomach when inserting the tube.

Induce vomiting—Get the poison out of the stomach and intestinal tract as quickly as possible before it is absorbed—by lavage (washing out) or vomiting. Fluids in large amounts will help to induce vomiting as well as to dilute the poison. A pint of warm soapy water or a strong salt solution (2 tablespoons salt to 1 glass water) are good emetics. Vomiting may also be started by touching the back of the throat with the finger or handle of a spoon. Again induce vomiting by repeating the whole procedure. Repeat several times. *Don't* induce vomiting if patient is unconscious.

Exception—Persons who have swallowed corrosive poisons (acids or alkalis) or kerosene, gasoline, or cleaning fluids should *NOT* be given anything to cause vomiting. Corrosive poisons destroy body tissues with which they come in contact. Since this destructive action weakens the walls of the stomach, the strain of vomiting might do further injury to the stomach wall. To protect the digestive tract, give the patient the following, if available: milk, raw egg white, olive oil or any vegetable oil.

Exception—The person who has swallowed *acid* must be given some form of alkali, such as milk of magnesia, chalk, baking soda, or lime water to neutralize the acid, in addition to giving a protective agent such as milk, raw egg white, olive oil or vegetable oil. The strong corrosive acids include . . . muriatic acid (hydro-

chloric acid), battery acid (sulfuric acid), nitric acid, acetic acid, etc. The person who has swallowed an alkali poison such as lye, caustic soda, potash, quick or unslacked lime, or strong ammonia water, etc., must be given (in addition to the protective agent) a weak acid such as lemon juice or vinegar, if available, to neutralize the alkali.

Give antidote—if known, and if you have the ingredients available. *Don't* take time to find the antidote before washing out the stomach. If antidote is unknown, prepare a universal antidote . . . see *"What to do."* Again induce vomiting and repeat the procedure.

Treat for shock—After person has vomited several times, have him lie down and rest. Keep him warm.

Exception—If poison was sedative (overdose of sleeping pills) keep person awake by talking to him and encourage him to walk about. Give several cups of black coffee if available every 2 hours until he recovers an no longer has the desire to sleep.

If carbon monoxide poisoning is suspected, the patient should be moved to fresher air, if possible. He should be kept warm and at complete rest for many hours. Stimulants may be given. If the source of carbon monoxide gas is believed to be in the shelter, every effort should be made to locate it. Possible sources are: acetylene, illuminating, furnace and automobile exhaust gases.

Shock

Shock is a state of collapse caused by acute peripheral circulatory failure, which may occur in such conditions as severe trauma, major surgery, massive hemorrhage, dehydration, overwhelming infections, and drug toxicity. The shock described here must be distinguished from emotional shock, insulin shock, therapeutic electric shock, and other less definite conditions for which the term is loosely used.

Syncope or fainting is perhaps the simplest form of shock, which is due to cerebral anoxia brought on by fatigue, prolonged standing, nausea, pain, emotional disturbances, anemia, dehydration, infection, heart diesase, and hypertension, etc.

Traumatic and hemorrhagic shock follow an injury and/or loss of blood. Traumatic shock may be the result of the initial injury which is probably a vaso-motor collapse, or it may be the result of progressively developing peripheral circulatory failure.

WHAT TO DO

If there is bleeding, control it.

Have patient lie down . . . loosen clothing.

Elevate feet about 12 inches . . . *Exception:* if head or chest injury, elevate head and chest.

Give oral electrolyte solution, if conscious.

Keep patient from chilling.

If signs of shock, keep patient lying down.

If patient vomits, oral and air passages must be cleared quickly.

If consciousness is not promptly regained after fainting, apply cold water to face . . . use aromatic spirit of ammonia, if available.

Symptoms

Fainting may occur suddenly but there are usually premonitory symptoms, except for cases that follow a physical blow or other abrupt trauma. The patient feels uncomfortable, weak, squeamish, giddy, and begins to sweat. Physical signs include increasing pallor, thin, rapid pulse, followed by abrupt slowing of pulse rate, fall in blood pressure and loss of consciousness. If syncope (fainting) persists for more than a few minutes, clonic muscular contractions, and even involuntary micurition (urination) and defecation may occur. (See *Convulsions.)*

Treatment

Fainting should be anticipated in all persons who have been injured or who have had an emotional trauma. Prevention is the best remedy. Treatment should be started before any symptoms appear.

In the premonitory state with mild symptoms, have patient either lie down or sit down and lower his head between his knees for a minute or two. If there is loss of

consciousness, place patient on back with feet elevated. Clothing should be loosened. If consciousness is not promptly regained, apply cold water to the face or use aromatic spirit of ammonia, if available, for inhalation. After regaining consciousness, the patient should remain lying down for 10 to 30 minutes and then be allowed up gradually. Comfort of the patient is important.

Symptoms

Traumatic or hemorrhagic shock may or may not be accompanied by a readily apparent injury. Usually, the patient is conscious and able to answer questions, but he may appear benumbed and apathetic. The most frequent complaint is thirst. Pain may be severe or mild, or it may be absent entirely. Restlessness is usually present. Anxiety, fear, or panic are relatively uncommon unless there is much pain. In deep shock, consicousness may be lost. Pallor and sweating occur; cyanosis is rarely severe, except with chest injuries; and vomiting is not infrequent. The pulse is soft, faint and rapid and blood pressure is usually low, except shortly after injury it may be normal or even elevated. Respirations are usually increased.

Treatment

If there is bleeding, it should be immediately controlled. (See *Bleeding.*) The patient should lie on his back with feet elevated about 12 inches unless there are head and chest injuries when head and chest may have to be raised. The body should be kept warm, but external heat is applied only if there has been exposure to cold, and then very cautiously. Fluid replacement is necessary. Give oral electrolyte solution (1 teaspoon salt, ½ teaspoon baking soda, 1 quart water) if patient is conscious. Give phenobarbital for restlessness and aspirin for pain. In deep shock, vomiting often occurs and is a grave danger because aspirations of vomitus are not infrequent which may be fatal. Patient should lie with head turned to one side and if he vomits, the oral and air passages must be cleared quickly.

Skin Rash

A skin rash may result from a number of causes, a few of which are: heat, allergy, communicable disease, certain types of food or plant poisons. In a shelter situation young babies may develop a heat rash if they are kept too warm. Persons with known allergies should be identified at the time of their entrance into the shelter and it should be ascertained if they have their prescribed medication with them.

WHAT TO DO

To relieve itching apply compress soaked in cool soda solution (3 teaspoons of baking soda and 1 glass of cool water).

For rashes with small pimples or eruptions cover generously with paste of baking soda.

Caution patient not to scratch or rub area.

Isolate patient, if possible.

(Give phenobarbital for relief of excessive itching. If rash is accompanied by other symptoms, consider giving penicillin.)

Treatment

Skin rashes are more commonly seen in children and frequently are caused by communicable diseases which are usually accompanied by other symptoms such as cold, sore throat and fever. Although the appearance of the rash follows the most infectious period of the disease, the patient should be kept separated from all others, if possible, to prevent possibility of further spreading the disease to others in the shelter. Anyone who assists in caring for those who have skin rashes should be careful to hold personal contact to a minimum and to wash his hands thoroughly after any care is given. The persistent itching of a rash may be relieved by the gentle application of a cool soda solution (1 heaping teaspoonful of soda to one glass of water). Soak a piece of gauze or soft cloth in the solution and pat, do not rub, on the affected area. If itching persists, phenobarbital may be given . . . If the rash is accompanied by other symptoms such as fever, sore throat, cold, etc., penicillin should be considered (see instructions for use of penicillin).

Stroke (Apoplexy)

A stroke (apoplexy), associated with total or partial paralysis usually on one side of the body, is caused by hemorrhage into the brain from a damaged blood vessel, or by the blockage of a vessel either by a clot inside the vessel (thrombosis) or by a foreign body in the blood stream (embolus). The most common causes of cerebral hemorrhage are arteriosclerosis (hardening of the arteries) or hypertension (high blood pressure) both of which are more apt to occur in persons over 40 years of age.

WHAT TO DO

Keep patient at bed rest, propped up if he is more comfortable.

When breathing is difficult, turn his face to one side so that secretion may drain from his mouth.

Remove any loose dental bridges or false teeth.

As patient's strength returns allow him to sit up or get up and move around if he desires.

Give fluids and soft foods if available as tolerated.

***DON'T* give patient anything by mouth if unconscious.**

Symptoms

A stroke usually starts suddenly. In a severe case there is a rapidly developing loss of consciousness and paralysis of the affected side. There may be vomiting and convulsions. The face is usually flushed and the breathing is noisy and labored. The pupils of the eyes are apt to be unequal in size and usually do not react to light. This test is most conveniently made by using a flashlight. The mouth may be drawn to one side and there may be difficulty in speaking and swallowing. Mild cases may have no loss of consciousness, and paralysis may be limited to a mere weakness, usually on one side of the body.

Treatment

Keep the patient at bed rest, propped up if he is more comfortable. If he is unconscious keep him flat and if he has difficulty in breathing turn him on side and allow secretion to drain from his mouth. Any loose dental bridges or false teeth should be removed. The patient should be made as comfortable as possible, kept at bed rest and given fluids and soft foods. As his strength returns, allow him to sit up or get up if he desires. Partial paralysis may persist after other symptoms have subsided. If it is impossible for him to move, turn the patient as much as possible to prevent bed sores or congestion in the chest.

Toothache

Toothache is caused when decay, which begins with a small break in the outside enamel covering the tooth, spreads into the The pulp contains nerves and blood vessels center of the tooth where the pulp is located. and when irritated is extremely painful.

WHAT TO DO

If cavity can be located in affected tooth, clean with sterile cotton.

Pack cavity with cotton saturated with Eugenol (from medical kit)

If aching continues, repeat 2 or 3 times daily.

Warm applications or cold packs may provide relief.

Aspirin and phenobarbital may be used to relieve pain.

Treatment

Under the best possible light look into the mouth, using a tongue depressor. If a cavity can be seen in the offending tooth, clean it out by picking at it gently with a toothpick or something similar wrapped at the tip with a wisp of sterile cotton. When clean, saturate a tiny bit of sterile cotton with Eugenol (from medical kit) and pack it gently into the cavity. Repeat 2 or 3 times if aching continues. *Caution:* Be careful not to get any of the Eugenol on the tongue or inside of the mouth—it will burn them.

Pain from an abscessed tooth may be relieved by warm mouth washes and warm applications. If these increase the pain, use cold water and cold applications. If pain persists, a solution of 4 aspirin tablets dis-

solved in half a glass of water and held in the mouth next to the aching tooth may bring relief. Also an aspirin tablet held in mouth between the cheek and the affected tooth until it dissolves may be effective in relieving pain. This treatment should not be repeated more than 2 or 3 times a day, since aspirin is usually irritating to the mucous membrane of the cheek. If the gum near an aching tooth becomes abscessed as indicated by inflammation and swelling, rinse the mouth with warm saline solution (1 teaspoonful salt to 1 glass water) as frequently as possible. This may cause the abscess to rupture. When it does, patient should continue to use saline rinse to aid healing.

Unconsciousness

The conditions which cause unconsciousness are numerous. It may be concussion of the brain with head injury, drunkenness, loss of blood, shock, fainting, asphyxiation, subersion, electric shock, paralytic stroke, diabetic coma or insulin shock, epilepsy, heart failure, heat stroke or smothering. This is only a partial list but serves to indicate why the cause of unconsciousness is often difficult to determine.

WHAT TO DO

When patient is flushed (red-faced) with strong, slow pulse

Lay person out flat with head slightly raised above rest of body.

Apply cold compresses to head.

When patient is pale (white-faced), cold and clammy to touch, weak pulse

Lay person out flat with head slightly lower than rest of body.

If available, hold aromatic spirit of ammonia under nose (except where head injury is suspected).

Keep the patient warm (See Heat Exhaustion).

When patient has bluish face, weak pulse, irregular breathing

Stretch person out flat on his back.

Start artificial respiration if breathing stops.

Suspect carbon monoxide poisoning, move patient to better air, if possible.

Keep him warm.

WHAT NOT TO DO

Don't Give Stimulant

Don't Give Food or Drink

Don't Move Patient (Unless Absolutely Necessary)

Symptoms

If there is no witness to inform of the circumstances when you are summoned to an unconscious person, you may be able to determine the cause by a careful examination of the victim and his surroundings. Are electric live wires present? Whiskey or liquor bottles? Poison containers? Look for evidence of bleeding and injury, particularly about the head. Check pupils of the eyes. If unequal in size, a stroke or brain injury is suggested. An odor of ammonia on the breath suggests kidney disease. Is the patient carrying a card indicating he is a diabetic and does his breath have a fruity odor, similar to nail polish remover? If there is blood-tinged saliva or froth about the mouth, it may be the result of tongue-biting during an epilepitic seizure or other type of convulsion. In the absence of symptoms and information that would suggest the cause, the color of the victim's face and the character of his pulse may supply the clue for emergency treatment until it is possible to determine the specific cause.

Bear in mind that patients with darker complexions, when flushed will not necessarily appear "red face" nor will they appear "white faced" when pale—nor "blue faced". You will have to make allowance for the complexion variation in determining the symptom. The lips may be a better guide as to whether the patient is flushed or pale or the finger nails may offer an alternate means. When the nail is pressed and released the color under the nail returns quickly on the flushed patient and more slowly on the pale patient.

A red face (flushed) with strong pulse which may be slow is a sign of apoplexy (see *Apoplexy)* in people past middle age. It is caused by a rupture of a blood vessel in the brain. One side of the body may be limp or paralyzed and the mouth may be drawn to

one side. If the patient has a high temperature with rapid pulse and respiration, it may be heat stroke, provided the weather and conditions support the possibility (see *Heat Stroke*).

A white face (paleness) with a weak pulse and skin which feels cold and clammy to the touch is a sign of syncope or simple fainting. It is temporary loss of consciousness which results when not enough blood gets to the brain. It has many different causes, many of them will be common to shelter occupants, such as overfatigue, hunger, poor ventilation, severe pain, internal bleeding, emotional upset, heat exhaustion, standing for a long time, or the sight of the blood.

A blue face with pulse and respiration weak or absent calls for artificial respiration (see *Artificial Respiration*) to restore normal breathing as quickly as possible. Whether the cause is asphyxiation, submersion, suffocation, etc., is of secondary importance until the victim is breathing again.

Treatment

With unconsciousness, irrespective of cause, there is the possibility that breathing will stop. If it does, start artificial respiration at once. If the cause of unconsciousness can be determined, then refer to the appropriate section of this manual for the specific treatment. If the cause cannot be immediately determined, then treatment must be based upon the color of the patient's face and the character of his pulse.

A red-faced unconscious patient should be lying down with his head *raised* slightly above the level of the rest of his body. Apply cold compresses (or ice bag if available) to the head. Keep the patient warm with covers but do not produce sweating. Don't move patient unless absolutely necessary and then only on a stretcher with patient lying down. If it is thought the patient is suffering a heat stroke, see that section in this manual.

A white-faced unconscious patient should be lying down with head lower than the rest of his body. A rolled up blanket placed beneath his hips will help lower the head. Loosen his clothing, especially his collar. Hold aromatic spirit of ammonia under his nose unless there is an associated head injury. When he comes to, it may hasten recovery to give him ½ glass of water. Keep the patient warm with covers but do not produce sweating. If cold weather it may be necessary to put hot water bottles, if available, next to him for warmth. If so, pad the bottles sufficiently to protect him from being burned. Warmth may also be indicated if patient's temperature is subnormal and heat exhaustion is a possibility (see *Heat Exhaustion*).

A blue-faced unconsciousness patient should be stretched out flat on his back and if breathing is absent or irregular start artificial respiration at once. Keep the patient warm.

If carbon monoxide poisoning is suspected, the patient should be moved to fresher air, if possible. He should be kept warm and at complete rest for many hours. Stimulants may be given if available. Every effort should be made to locate the source of the carbon monoxide, if it is believed to be in the shelter. Possible sources are: acetylene, illuminating, furnace and automobile exhaust gases.

Urinary Retention

Retention of urine is the gradual accumulation of urine in the blatter with distention and inability to pass it. It may be caused by urethral obstruction, bladder stone, or by neurogenic bladder resulting from a spinal injury. In the male an enlarged prostate may be the causative factor. Urethral obstruction usually occurs from acute congestion of the mucous membrane after exposure to cold or indulgence in alcohol.

WHAT TO DO

Restrict fluid intake.

Apply external heat.

Give phenobarbital for discomfort.

Symptoms

There is pain with intense desire but inability to urinate. There are frequent, straining efforts with abnormalities in urinary flow, with dribbling and occasional bleeding. There is dullness over the pubic area and bulging of the distended bladder. Males over 60 years of age with these symptoms should be suspected of having an enlarged prostate.

Treatment

Treatment under shelter conditions will have to be palliative. Fluid intake should be restricted to 1 quart per day. Cold and dampness should be avoided and external heat may be applied. Phenobarbital may be given for restlessness. If the person with acute urinary retention has brought his own catheter to the shelter he should be catheterized with it. This will relieve the acute condition temporarily. Patients with acute urinary retention should be given high priority for early transfer from the shelter.

Venereal Infections

Venereal infections are communicable diseases which are spread through intimate sexual contact. Syphilis and gonorrhea are the most common. Venereal diseases could be a serious problem under shelter living conditions, particularly those cases recently acquired and which have not been treated. Competent physical examinations of all shelter occupants are precluded so that unless a person voluntarily reports himself, the chances of discovering an infected person are relatively poor. Similarly, a positive diagnosis, without laboratory equipment and the services of a medical technician, is questionable.

WHAT TO DO

Isolate infected patient insofar as possible.

Give penicillin if patient is not sensitive to it.

Give sulfadiazine for chancroid. (See instructions for use of sulfadiazine)

Gonorrhea is transmitted by sexual intercourse. Direct inoculation may result from contact with contaminated hands or instruments. Female infants and children are extremely susceptible. A severe form of eye infection (conjunctivitis) often leading to blindness may also result in this manner even in adults. The infected patient may auto-inoculate his own eyes.

Syphilis—Early symptoms may be minimal or entirely absent so that recently infected persons are often unaware that they have the disease. The first sign is the development of a sore (chancre) at the site of inoculation which is usually quite painless and may be deceiving. Laboratory findings provide the only sure diagnosis but are not available.

Treatment

Gonorrhea

Isolate the infected patient insofar as possible. When there is no history of patient sensitivity to penicillin (see instructions for use of penicillin), give a larger dose than average which may be more effective (6 tablets). If symptoms do not subside in 48 hours, give second dose of 6 tablets. Do not give more penicillin after second dose. Effective preventive measures other than isolation are difficult to obtain, if not impossible, but patients should be warned of the dangers of infecting others unless precautionary measures are taken. There should be no intimate body contact and the hands should be washed thoroughly after touching the genital organs.

Syphilis

Treatment of syphilis in shelters is not feasible as it requires laboratory diagnosis and extensive treatment. However, personal contact should be avoided to prevent infecting others.

Vertigo

True vertigo, as distinguished from faintness, lightheadedness and other forms of

"dizziness", is a symptom of many diseases or conditions. These include ear conditions, toxic effects from drugs, defective vision or eye strain, arteriosclerosis and high blood pressure, anemia, infectious diseases, increased pressure inside the skull from any cause, and psychogenic disorders. (See appropriate sections of this manual.)

WHAT TO DO

Determine cause and treat symptoms.

Keep patient at rest.

Symptoms

Vertigo is a more severe form of dizziness or lightheadedness. There is a feeling that the body is spinning or turning or that the room is rocking or turning around. Sometimes it is accompanied by nausea and vomiting. Vertigo may come on in sudden attacks lasting from a few minutes to an hour or two.

Treatment

Relief depends upon determining and eliminating the cause, if possible. Emergency treatment is symptomatic. Patient should be kept at rest, insofar as practical. If vertigo is severe and prolonged, an adult patient may be given one phenobarbital tablet (½ gr.) 3 times a day.

Wounds (Abdominal and Chest)

Open wounds of the chest and abdomen are essentially the same as those of other major injuries, in that they are likely to be accompanied by severe hemorrhage and shock with the threat of infection. Severe open wounds will require professional treatment which may not be available for several days or a week. Emergency first aid and the prevention of infection are necessary.

WHAT TO DO

If intestines protrude and are contaminated with gross dirt, rinse gently and replace.

Cover open wound in abdomen or chest with sterile dressing.

Bandage firmly to hold dressing in place.

Treat for shock.

Treatment

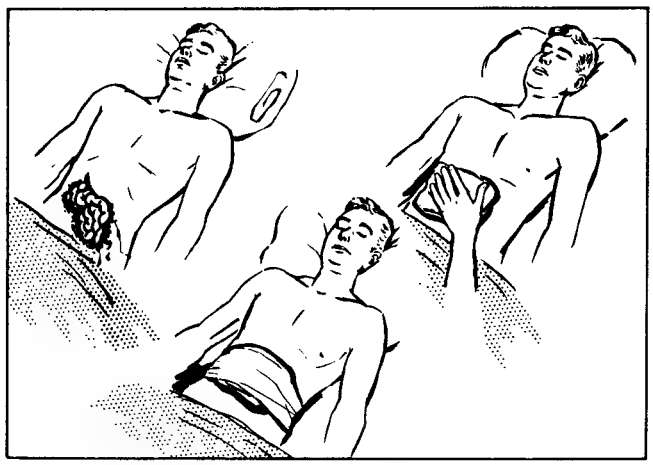

FIGURE 11.—Dressing for open wound in abdomen.

An open wound in the abdomen may have intestines protruding; if contaminated with gross dirt rinse them gently with warm saline solution (1 teaspoon salt to 1 quart water) or warm drinking water. Replace intestines, cover wound with sterile dressing and bandage firmly to hold dressing in place. Always treat for shock.

A chest wound which opens an air passage to the lungs and causes the lungs to collapse is known as a "sucking wound". Air may enter and blow out of the wound with a "sucking" or hissing sound. Froth or bubbles may appear. Place a sterile dressing over the opening immediately. As the patient exhales, push on either side of the wound to bring the sides together and thus close the opening. Hold the dressing firmly in place while bandaging and cover completely to make airtight.

CARE AND TREATMENT OF SPECIAL GROUPS

Care of the Newborn Infant

CAREFUL ATTENTION to the newborn infant is vitally important. More babies die during the first week of life than in any other comparable period. Hence it is essential that the member of the health team most experienced in the care of infants be assigned this particular duty.

After the umbilical cord has been tied securely, a dressing and "belly" band applied, and the infant is breathing normally, there are three primary considerations for the baby: warmth, protection from infection and nourishment.

WHAT TO DO

Keep infant warm but avoid excess covering.

Protect infant from infection.

Encourage breast feeding.

Prepare and give formula if breast feeding is impossible.

Warmth and Protection From Infection

Before handling the child, the hands should be washed. Any blood on the newborn may be gently wiped away, but the baby should not be washed or cleaned for at least 24 hours. If there is a shortage of water, baby can go without bathing much longer. The vernix caseosa (a thin, waxy material on the baby's body) will be unpleasant looking and may soon have an unpleasant odor, but it will act as a protective covering for the baby's skin and protect it against infection better than any cleaning. It also helps the baby adjust to the change in temperature between the uterus and the outside surroundings. The newborn should be wrapped loosely but completely with whatever warm material is available. If thought necessary, the baby may be placed next to the mother's body for additional warmth. Avoid excessive covering if the shelter temperature is 85° F. or above.

The stump of the cord at the navel should give no difficulty if it is kept clean and dry. If a discharge occurs, the stump can be cleansed with isopropyl alcohol. Dressings and abdominal bands are not essential, but they tend to avoid tension on the umbilicus.

A cardboard carton, a box, a drawer, basket, or other suitable container, lined with a blanket and with crinkled paper for underpadding, will provide an adequate bassinet. The best location is relatively near the mother and away from the line of general traffic.

Feeding

Breast feeding provides the safest nourishment for the newborn and is the most practical method under shelter conditions. However, it should not be tried if the mother's health is not up to it or if it is expected that she will not receive an adequate amount of food and fluids. The nipples and breast should be bathed once a day with mild soap and water, rinsed, and dried gently with cotton or soft cloth. The baby may be put to breast immediately after birth and again 12 hours and 24 hours later, then every 8 hours during the second day, every 4 hours during the third and fourth days, and every 3 or 4 hours thereafter. During the first few days, the baby should be left at the mother's breast for no more than 3 to 4 minutes at each feeding on one breast. After that, feeding time can be gradually increased but it need not last more than 10 minutes in order for the baby to get the milk he needs. After feeding, the baby may prefer to remain longer for comfort and cuddling.

The mother should alternate breasts, one per feeding. If the baby does not seem to get enough milk, she may try giving the baby both breasts at each feeding. After a few days, if the baby still does not seem to be getting enough milk, as shown by the baby's cries after feeding, artificial feeding should be started.

Some mothers, especially if this is not their first baby, may prefer demand feeding, which means feeding the baby whenever his cries indicate hunger. This arrangement is just as good for the baby as the fixed schedule. The decision should be the mother's, unless one is more adaptable than the other to shelter conditions.

Artificial Feeding

A simple method for preparing a formula for artificial feeding is to dilute canned evaporated milk (unsweetened) with water. For the first 2 weeks it should be 2 parts water to one part evaporated milk. In an emergency, the baby can take evaporated milk undiluted, but will need smaller amounts and will need other bland liquids to supplement it. An alternative formula, which is equally acceptable for a short term, is the *regular,* nonfat, dried milk. Follow directions on the carton. It will take a little time and patience to reconstitute without lumping. Still another method is the *instant,* nonfat milk. Follow the directions on the carton. It reconstitutes much more readily than the regular type.

Because there will be no refrigeration facilities, formula should be prepared just prior to each feeding. Any formula remaining after the feeding should be consumed immediately by the mother or a family member.

If there are two or more infants in the shelter, one formula should be prepared for the group. This will minimize handling of ingredients and equipment.

The bottle and nipple should be cleaned as well as possible, preferably boiled. The milk should be poured directly in the bottle and the water added in the bottle. If the mother did not bring the necessary equipment to the shelter with her, there may not be a feeding bottle, nipple, and means of measuring available. The two parts of water to one part of evaporated milk will have to be estimated. The baby will have to be fed with a teaspoon. Place the tip of the spoon against the baby's lower lip so the baby can suck on the spoon. If it is poured in, the baby will gasp and choke on it. If a medicine dropper is available, use this to drop milk slowly into the inside of the baby's cheek. Keep the bottle and other materials scrupulously clean between feedings and use for nothing else. The baby's formula does not necessarily have to be heated.

During the first two weeks, most of the baby's crying will be due to hunger. If the baby cries immediately after feeding it usually means he wants more. Offer him more. He will not take more than he wants. If the baby cries between feedings, he may be thirsty, especially if the shelter is hot. Give the baby water several times a day between feedings. A baby does not need vitamins during the first few weeks.

The feeding for infants born prior to shelter occupancy would preferably remain as it was before coming to the shelter—either breast fed or formula. If a change in the feeding is necessary for any reason, it will be influenced by what the mother brought with her, and what is available in the shelter.

Body Care of the Baby

After 24 hours the baby can be bathed. Soiled parts should be wiped gently and thoroughly with soft materials dipped in baby oil if available or bland soap and water.

Waterproof panties or substitutes, such as oilcloth or plastic material, should be used in order to avoid wetting the surface on which the baby lies. Disposable diapers are preferred, but in their absence, torn up sheets or other substitutes may be used. If these materials are not available, paper towels, napkins, or toilet tissue may be used as a filler with whatever is being used as panties. Unless the skin is very irritated, diapers do not have to be changed after each wetting but should be changed after bowel movements.

If the stump of the cord at the navel was covered by a sterile dressing, this covering should be left on until the cord dries up and falls off. This usually occurs in a week. No other treatment is necessary.

Care of the Premature Infant

The premature baby is very small (5½ pounds or less) and may look bluer than other babies. In time of disaster, there will very likely be many premature births. The smaller premature infant is comparatively inactive with only a feeble cry and irregular breathing. The head is relatively large, eyes prominent, and abdomen protruding. The genitals are small, and there is a tendency to umbilical hernia. The body temperature is subnormal.

The hazards of the first few weeks are increased in proportion to the degree of prematurity because of the functional and anatomical immaturity of the various organs. Because of his immaturity, the premature infant requires additional attention: to insure normal breathing, to keep him warm, to feed, and to prevent infection.

WHAT TO DO

Keep infant's air passage open.

Keep infant warm.

Take care not to suffocate or restrict movement.

Urge breast feeding.

Prevent infection.

Dont't Feed For 24 to 72 Hours After Birth.

Respiratory Distress is the most frequent cause of death in premature infants and is closely related to the degree of prematurity. Symptoms of this condition are chest retraction, expiratory grunting, and decreased air entry during the first few hours of life, cyanosis (bluish colored skin) and pitting of the hands and feet. Regular breathing is of primary concern. Care should be taken to keep the infant's air passages open by gentle suctioning of the mouth with a bulb syringe and by body positioning. When prolonged periods of apnea occur (long periods between breaths), stimulate by stroking the back or soles of the feet gently. Feeding should be delayed until the infant shows signs of improvement.

Keep Infant Warm

It is important to keep the premature infant warm. Wrap him loosely but completely with whatever protection is available. If clothing is used, that of the baby's immediate family is preferable. The covering should be of light enough material so as not to interfere with respiration or movement. If the temperature in the shelter reaches 90°F. avoid excessive covering. If the shelter is cold, the baby may be kept inside the mother's clothing so her body heat will keep him warm. If this is done, precautionary measures should be taken to prevent suffocation. If water can be heated and bottles are available it may be possible to keep him warm with bottles of hot water set around the edge of a large box or carton into which a smaller box has been placed for his bassinet. Care must be taken not to burn the baby.

Feeding

Breast feeding provides the safest nourishment and every effort should be made to provide it. If the infant is not strong enough to suckle, it should be dropper fed with milk expressed from the mother's breast. Where this is impossible, artificial feeding must be considered. Premature infants need very little food and usually are not fed for 24 to 72 hours after birth. Records show that deaths are not due to starvation or dehydration. In general it is more dangerous to feed too much and too early.

The first two or three feedings, at 3-hour intervals, should consist of ½ to 2 teaspoonfuls of water. If these feedings are taken well, diluted milk feedings described for the normal infant may be started. However, the non-fat dry milk formula should not be used because of its high protein content. Dropper feeding is preferred but a teaspoon can be used if care is taken to prevent aspiration. It is not expected that the fluid or caloric requirements will be met during the first 4 or 5 days of feedings. Increase amounts of feeding as tolerated.

If the premature infant has respiratory distress, delay first feedings until he shows signs of improvement. Early feeding introduces extra hazards of vomiting and aspiration.

Prognosis is more favorable with each passing day of survival. However, birth

Feeding

weight and degree of prematurity greatly influence the final outcome. Although most deaths due to prematurity occur during the first few hours of life, it is not uncommon for very small infants to succumb to exhaustion after 3 to 5 days.

Prevent Infection

Every effort should be made to prevent infection. Permit vernix caseosa to remain on the skin, although it may be wiped off the face. It may be unsightly but it helps to protect the infant from infection and also from changes in temperature. The infant should be kept with his mother, and one person should be responsible for mother and baby. The mother should cleanse her hands before feeding the baby. Do not bathe the baby or unnecessarily expose. The diaper area can be kept clean with water or baby oil, if available. Nothing should be done to the baby's eyes, ears, nose, and mouth. The cord will not give any difficulty if it is kept clean and dry. If a discharge occurs, the cord stump can be cleansed with 70 percent alcohol.

Medical Emergencies in the Newborn

Symptoms of disease in the newborn infant are often different from those in the older child. Many minor physiological deviations occur such as poor feeding, lethargy, overactivity, or unstable body temperature. Infants manifesting more than one deviation from the normal should be observed closely so that they may receive early treatment when indicated.

Dehydration develops when the water loss from the body exceeds the water intake. The skin becomes dry and loose, low body temperature occurs in the debilitated infant and fever in the more vigorous one, activity decreases, jaundice and cyanosis appear. Fluids should be given and the possibility of infectious disease must be considered.

Infectious Disease

Infectious diseases spread quickly, either by personal contact or indirect contact with infected articles, secretions, or excretions. The newborn is very susceptible to many infectious organisms not considered serious in older infants. While it will be impossible to employ preferred techniques of control, it is imperative that the following measures be taken to curtail spread of the infection as soon as it is suspected:

Separate ill infants from the group as much as possible.

Carefully dispose of secretions and excretions.

Separate feeding utensils, clothing, and bedding, if possible.

Urinary Retention

During the first 24 hours urinary retention in some of the newborn is generally not alarming. Try gentle pressure over the bladder area. If it continues in the male child, it may be due to tightness of the foreskin of the penis. (Retraction over the glans should be accomplished.) Malformation or injury of the spinal cord may also be the cause. (Earlier examination may have revealed the anomaly or malformation.)

Fever

Fever in the first few days of life may be due to insufficient fluid intake, to high environmental temperature, an infection, or combinations of these causes. Increased water intake between or following feedings should be encouraged, and care taken to avoid excess clothing or covering.

Acute Diarrhea

Any diarrhea in the newborn period is serious. These infants quickly become listless, develop fever, and deplete their reserve of electrolytes and water. Infection or overfeeding may be implicated. The sudden onset of explosive water stools, which may contain mucus and blood, suggests a primary infection. Isolate infant to the degree possible. Persons responsible for the dispoal of soiled diapers and other articles must cleanse hands after handling infected articles and must not be allowed in food preparation or serving areas.

Acute Diarrhea

One or two feedings can be omitted or smaller amounts given. If the baby is breast fed, let him nurse as long as usual, and, after feeding, give him as much water as he will take. If the baby is artificially fed dilute the milk mixture with an equal amount of water and let him take as much as he wants. When feeding is refused, and vomiting and diarrhea persist, offer sugar and salt solution every three hours for several feedings (1½ tablespoons sugar, ¼ teaspoon salt, 1 quart water). As the diarrhea improves, gradually return the infant to his regular formula.

Convulsions

Convulsions in the newborn are frequently brief. They usually are clonic seizures (alternating rigidity and relaxation) rather than generalized seizures and have many causes. Under shelter conditions, treatment aimed at maintaining an open airway and preventing anoxia (the reduction of oxygen in the body tissues below physiological levels) is as follows:

Turn the infant on his side to allow drainage of secretions and to prevent aspiration. Clear pharyngeal secretions with a bulb syringe, if necessary.

If the seizure is generalized, the infant may become cyanotic. Place him on his back, extending his head backward and lifting his chin. If his mouth is open, insert a cloth-wrapped spoon to prevent his tongue from falling back and obstructing the air-way.

Do not give anything by mouth during the convulsion.

Vomiting and Abdominal Distention

Continued vomiting is a sign of pathology. Persisted early vomiting of bile-stained vomitus, with rapidly developing signs of dehydration, are the cardinal signs of congenital intestinal obstruction. Projectile vomiting immediately after feeding in a 3 or 4 week old newborn suggests pyloric obstruction. Administer phenobarbital, ⅛ gr., 20 minutes before each feeding. Marked abdominal distention with cyanosis suggests infection and penicillin may be given.

Jaundice

Jaundice which is present at birth or within 24 hours, is pathological and may indicate Rh factor incompatibility. In such case, little or nothing can be done in the shelter.

Jaundice which occurs after the first day of life in the otherwise healthy newborn is physiological and usually subsides rapidly in the full-term infant, lasting a day or so longer in the premature.

Care of Children

Children are more susceptible to communicable diseases and in a shelter where health hazards will abound, preventive measures cannot be overstressed. Every possible measure should also be taken to prevent or to minimize accidents and infections. Also, every method should be made to alleviate emotional stresses and disturbances which will inevitably occur.

Many children will be able to take care of themselves and do many things for others if assigned special duties, but don't forget they are still children. Time should be spent talking to them and listening to them, reassuring them and comforting them.

Emotional Disturbances

It is to be expected that some children will be more disturbed than others because of their ability to understand in some degree the nature of the disaster. Some may be quite adult-like in their reactions while others may become so thoroughly frightened and insecure that they will revert to habits and behavior of a younger child. These children will need special guidance, encouragement, reassurance, and above all, patience.

A certain amount of family separation seems bound to occur and must be taken into consideration in preparing for emotional disturbance. Whether from this cause or other combinations of causes, it must be recognized quickly and sensibly. Willful misbehavior must be recognized as such and handled accordingly. In general, however, children will follow the mood established by

Emotional Disturbances

adults in order to make shelter life livable. Some children may not fit easily into scheduled activities. It matters little whether it is because of emotional upset or mental or physical handicap. Such children will need special care and understanding. Do not blame, reprimand or threaten children who are unable to orient themselves to shelter routine. It may have little or no effect and may do more damage than good. The difficult child's parents, if they are in the shelter, are the best equipped to manage the child. Through experience and understanding, parents know that even retarded or handicapped children can function effectively within limits.

Pediatric Emergencies

Acute abdominal pain, with or without fever, persistent nausea, and vomiting, may be indicative of many conditions in children over 1 year old. The child should be quietly at bed rest and should not be given anything to eat or drink until the symptoms abate. Then you may give an oral solution (¼ teaspoon salt, 1½ tablespoon sugar, 1 quart water) and sulfadiazine (see dosage for children). If pain localizes, fever persists, and the abdominal muscles are tense or rigid, appendicitis is suggested.

Accidents are apt to happen despite the best prevention program which, merits health personnel consideration from the beginning of the shelter stay. For example:

- **Supervision of infants and pre-school children at all times by a competent adult.**
- **All medicines, drugs, and chemicals should be kept in original, labeled containers out of reach of children.**
- **Sharp or dangerous objects, such as razors, knives, scissors, pins, matches, and small loose objects which children may swallow should also be kept out of reach.**

Burns are usually preventable and precautions should be taken in the shelter to see that they are. Children, however, may be scalded by over-turned hot drinks or burned by hot objects, in spite of precautions. A burn involving more than 5 per cent of the body surface in a child may cause death. A burn on the face may produce edema (swelling) and lead to interference with the airway. Treatment is directed to preventing infection, replacing fluid and electrolyte losses, and alleviating pain. If the burned area contains large blisters or is seeping, encourage the child to drink as much as he wishes of a solution made of 1 quart of water containing ½ teaspoonful of salt and ½ teaspoonful of baking soda.

Fractures occur in children most frequently between the ages of 2 and 9 and usually result from falls. The arms, legs and collarbones are the most common sites of injuries. Use splints, bandages and slings for immobilization, taking care that they are not so tight as to interfere with the circulation. Signs and symptoms of circulatory impairment are: coldness, pallor, blueness, edema, numbness, pain and a slow return of blood to the part on blanching finger or toe nails with your own finger.

Head Injury is the most frequent serious injury sustained from accidents in childhood. Children usually recover from these injuries. A lucid period followed by unconsciousness indicates intracranial hemorrhage. Persistent symptoms of shock indicate other brain injury. Absolute bed rest is essential. Examine generally for bleeding or fracture. Examine scalp for external injury and eyes for roving movements. Examine pupils for size equality and reaction to light. Examine ears, nose, and mouth for bleeding or leakage of spinal fluid.

Poisoning may result from ingestion of drugs or other supplies such as water purification tablets, disinfectants and detergents, all of which are stockpiled in the shelter. Other poisonous materials such as medicines, matches, cosmetics, etc. may be brought in by shelterees. Try to determine exactly what was swallowed and how long ago. Treatment is the same as described in the section on POISONING in this manual.

Care of the Aged

Older people should find no greater difficulty in adapting to shelter life than other people. In general they have family ties

which should be maintained as with other members of the group. As individuals they are subject to much the same types of injury and illness as other adult shelterees. If chronically ill they often have insight into their conditions. Hopefully they, or members of their families, will have provided necessary amounts of their special medicine to tide them over the period in the shelter. Those who are up and about and have possession of their faculties, will be able to manage their own care quite well and will often be able and willing to assist with the care of others. If bedridden or senile they become problems not only for their families but conceivably for the entire group. In this respect they have counterparts in all other age groups. As individuals they will require such attention and care as circumstances permit.

In caring for the elderly, every effort should be made to make their environment as cheerful and as comfortable as possible. Old persons should not be hurried. Their hearts and muscles are no longer fit for rapid movements. Often they feel insecure and are afraid of falling. Frequently the elderly are especially sensitive to cold. They may need extra clothing to keep warm. Changes add to the feeling of insecurity. Help them by assigning simple tasks to the limit of their mental and physical capabilities. Many elderly people will welcome the opportunity to assist in the care of children and the sick.

Nursing Care of the Sick and Injured

Nursing care under shelter conditions will tax the knowledge, ingenuity and disposition of those qualified to perform the function. Calmness and serenity under stress and confusion will be much needed attributes. Most people have, at one time or another, faced the problem of caring for their sick and injured in the home where the surroundings were familiar. Water, food, medicines, linens, professional advice — everything needed was readily available. In the shelter none of the necessities of the sickroom may be available in the quantity or quality required. The ability of the nurse to improvise and to accept conditions as they are will be invaluable assets to accompany her knowledge and experience.

It must be anticipated that parents, relatives and friends of the patient may offer counter-directions or interference. This is a normal situation particularly when strangers are involved and stress conditions prevail. Tact and the best professional judgment possible must be used under these circumstances, so that the best interests primarily of the patient, but also the entire group, are served.

It must be further anticipated that skilled individual or professional attendance for any patient cannot be provided around the clock. Neighbor-help will have to be recruited.

To curb spreading of infections and communicable diseases will be a paramount responsibility, not only of the nurse but of everyone.

Safe Disposal of Waste. Failure to dispose properly of waste material from the sick person can lead to the spread of infection and disease. Soiled dressings, bandages, cotton, tissues, etc., must be disposed of carefully. Wrap in newspaper or use a paper bag and discard in the can provided for this purpose. Burning, if possible, is the best method of disposal.

Communicable Disease and Infection. The sick person should be kept apart or isolated to protect the shelter occupants. It may not be possible to keep him in a room by himself but a corner of the shelter may be available where a blanket or sheet could be hung up to screen him from others. Keep people away from him. It is preferable to have only one person caring for him and she should protect her clothing by wearing a smock, or some kind of a covering garment, when she is near the sick person. This garment should be removed and her hands carefully washed before she carries out other activities in the shelter.

Washing the hands is a very important procedure after caring for a sick person and particularly after handling body wastes. If soap and water are limited or not avail-

able, improvisation with dry wipes may be necessary or a "community basin" containing a disinfectant. Rubbing briskly to obtain friction by using sand, coarse material or other available substance is another means of improvisation. However, care must be taken to prevent breaking or scratching the skin.

Discharges from the sick person are a most dangerous source of germs. A person with a cold or respiratory infection should be asked always to cover his nose and mouth when he coughs and sneezes. The tissues or cloths used by him should be put in a paper bag and placed in the refuse can.

Dishes and eating utensils should also be kept separate and boiled and washed in hot soapy water. An ill patient with symptoms of a respiratory disease should at least have his dishes kept separate and washed separately if at all possible. Paper cups and plastic utensils are very useful in such a situation.

Pain: In the possible absence of professional medical advice in the shelter, the nurse's care for patients will have to be directed to the symptoms and toward making the patient as comfortable as possible.

A patient with abdominal pain requires rest, lying down if possible, and should be kept warm, but not uncomfortably warm. He may determine the position of most comfort to him. It may be on his side with support (pillow, rolled blanket, newspaper or outer garment) for his back and abdomen, with knees flexed. He may be more comfortable on his back with head and shoulders elevated. Back support may be with pillows, back of chair, or cardboard box cut to a 45 degree angle. A support for his feet may help him to hold his upright position. Cold compresses may be applied to the abdomen. *DO NOT GIVE A LAXATIVE.* Food and fluids should be restricted, but sips of water may be permitted.

Chest pain: This patient, if lying down, should have head and shoulders elevated high enough for comfort and respiratory ease. He may prefer to sit in a chair with head and shoulders supported by arms resting on a table.

A cloth binder pulled snugly around the chest and pinned securely gives support to the chest and a measure of comfort. A coat or other garment can be similarly secured to give support. Chest pains frighten most patients, so the patient will need reassurance. Someone should remain near him and he should not be left alone for long periods. He may be given food and fluids as tolerated.

Fever: The patient with a fever should have bed rest, or the shelter equivalent, and should remain at rest for at least 2 days after the temperature becomes normal. He should get fluids, forced if necessary, and food as tolerated. Sponge baths with cool water, if available, are helpful in lowering the temperature. A mixture of 2 parts water, and 1 part alcohol (isopropyl) may also be used for sponging him. If fever is accompanied by other signs and symptoms of a contagious disease, the patient should be isolated and visitors restricted.

Convulsions: If the patient has a seizure or convulsion, there is little that can be done except to protect him from hurting himself. Slight restraint may be necessary to prevent him from hitting objects but don't use forceful restraint. His clothes should be loosened and he should be kept lying down and warm. If you can do it without using force, slip something like a folded handkerchief or a piece of rubber (nothing hard) between his teeth to keep him from biting his tongue or cheek.

Unconsciousness: The unconscious patient requires positioning to facilitate breathing and to allow secretions to drain from the mouth. If he is on his back, elevate his head and turn to one side with tongue forward in mouth; remove his dentures. His mouth may be cleansed with a toothbrush, padded spoon, tongue depressor or stick, and using a salt and soda solution, or other available mouth wash. His lips may be lubricated with petroleum jelly.

Paralyzed Extremities: The patient who is paralyzed and confined to bed should have a foot support extending above the toes. With the patient lying on his back, there should be a support for the knees. Place a rolled towel, magazine or something similar

under the knees to flex them slightly. In a prone (face down) position, place support under shins, between the knees and ankle. While the patient is supine, the arms are supported with fingers and wrist bent slightly upward. Elbows may be flexed with upper arm in abduction (away from body).

If the patient has back or neck injury, the nurse will need assistance in moving or changing his position. Slipping the hands under the body "log roll" him, turning his body in one piece, not in segments. Never bend or flex the back or neck.

Fecal Impactions: The impaction should be broken up and the matter removed with a gloved finger. Follow the removal with an enema and if necessary repeat the enema.

Itching of the Skin: Constant scratching of the affected area, especially by children is apt to cause infection if the skin is broken. The itching may be reduced by a baking soda solution (3 teaspoons baking soda in a glass of water) in which a compress or cloth has been soaked and applied to the irritated area. The cooler the solution, the greater the relief. Petroleum jelly (petrolatum) or other available vaseline is effective in lubricating dry, itchy skin.

All sick or injured patients need reassurance and in the shelter, the nurse will be administering a very potent medicine if she is able to give confidence and reassurance to her patient.

These instructions cover only a few of the many situations and problems which will confront the nurse. However, they may offer some suggestions of care and treatment under austere conditions.

Shelter Fatigue

Unlike disability from infectious and physical injuries, disability from emotional turmoil can be greatly influenced by what it is called. Military experience supports the categorical use of such a term as "shelter fatigue" for behavioral deviations which may occur in a fallout shelter after actual enemy attack.

Symptoms—Initial Phase

During the initial phase—the first 24 hours in the shelter—some of the occupants can be expected to be apathetic and stunned by the catastrophe. Their own immediate survival may be unreal to them and the fate of relatives and friends not in the shelter may be too painful to contemplate. Future dangers and opportunities may hold no immediate interest to them. For a time, they may lie or sit about the shelter without initiative or much response to external stimuli. This behavior pattern may be prolonged indefinitely, but not necessarily.

Some of the shelter occupants will react constructively. They will turn their attention to appraisal of the shelter, the state of its equipment, and the needs of the total situation.

Still others can be expected to be destructive in their reactions. They may be more self-centered, and may talk excitedly and repetitiously about their personal experiences just prior to entering the shelter. They may pace about restlessly and be more inclined to criticize defects in the shelter than appraise its assets. In a hostile manner they may attempt to arouse those who are apathetic.

Intermediate Phase

After the first 24 hours and until the time of emergence can be predicted is the intermediate phase. This is a holding, maintenance phase in which behavior will reflect largely the success or failure of leadership procedures established in the initial phase. With good group morale, the incidental friction, rumors, and other complications can be handled as they arise. Poor morale can lead to endless bickering, physical assaults, and even disorganized panic.

Terminal Phase

This is the period prior to final departure from the shelter after prediction of departure date has become possible. Again, behavior in this phase will reflect success or failure of leadership procedures established in the earlier phases. Even with good morale, the prospect of final emergence into

a badly damaged community will increase the general level of anxiety of the shelter occupants.

Treatment—Initial Phase

Schedules can be established to distribute and rotate the chief chores of shelter living to the occupants, gradually, as their capabilities will permit. Those who have a destructive reaction may be helped to simmer down by any number of assignments to be done under supervision. As the stunned and apathetic begin to show faint signs of interest in the proceedings they may gradually be enlisted to help first with the simplest chores. Within hours, many of them may assume their share of the total responsibilities commensurate with their abilities and background.

Focus must always be on reviving abilities of the shelter occupants. Avoid condemning them for having been initially somewhat overwhelmed by the disaster. The indiivdual meaning of the situation has much to do with the extent of disability suffered by each person. The individuals, by their reactions, will not intend to be a burden or a handicap to others. Largely unconscious forces may dull their judgment temporarily. Finding even some small but respected role in the community of survivors will be the best psychological antidote to restore them to full community service.

Those who may be too deeply distressed even to begin recovery of their normal judgment in response to work assignments may benefit from cautious use of phenobarbital or such sedatives or tranquilizers as may be available. However, the less the resort to such drugs as an insulation from present realities, the more rapidly group morale may be developed on a sound basis.

Intermediate Phase

As the functioning of shelter occupants improves, delegation of responsibility in a democratic fashion will contribute to sustaining feelings of significance in each shelter occupant. Adjudication of disputes will be more acceptable if assisted by an advisory group of occupants and not performed by someone in authority. However, one individual or a minority should not be scapegoated by majority decisions. Rationing of supplies, revision of chore responsibilities, and dissemination of pertinent information are all more palatable to a group if the manager and his staff gradually share some of these reponsibilities they had to assume completely at first.

Terminal Phase

There will be much uncertainty about the future which will be shared by all occupants of the shelter. Group integration developed during their shelter occupancy can be supported by terminal planning of how best to reach and cooperate with the nearest communities which, reports may indicate, will have resumed some semblance of community organization. Such centering of attention on attainable short term goals will foster a sense of purpose in individuals leaving shelters. This can set a pattern for psychological survival in the midst of continuing stresses to be anticipated after emergence from the shelter.

Complications

There may be many problems in the shelter to threaten group morale such as shortage of supplies, defective ventilation and illumination or temperature control, appearance of contagious disease among the shelter occupants, etc. Firm, quiet measures of control will be required.

Loss of all hope that survival will be worthwhile is the greatest danger psychologically. It is for this reason that evidence of surviving—or reviving—social organization somewhere outside the shelter will be very important to even minimal success in surviving psychologically within the shelter.

ARTIFICIAL RESPIRATION

Mouth-to-Mouth Method

BREATHING MAY STOP or it may be so shallow as to be ineffective as a result of poisoning, electric shock, strangulation, drowning, suffocation, injury, poliomyelitis or convulsions. You will have to breathe for your patient. Artificial respiration (artificial breathing) is a method of getting air into and out of a persons' lungs until he can breathe for himself. It is a life-saving measure. It should take precedence over all other treatment except the checking of severe arterial bleeding which usually can be done quickly. If another person is able to assist, have him take measures to check the bleeding while you proceed with the artificial respiration. Most people can live only 6 minutes after breathing stops. Artificial respiration must begin at once. It is comparatively easy to perform.

WHAT TO DO—*Mouth-to-Mouth Method*

Place the person who has stopped breathing on his back.

Clear mouth and throat of foreign matter to open airway to lungs.

Tilt head back so chin points upward. With your thumb in person's mouth pull lower jaw so it juts out.

Start Artificial Respiration Immediately

If an injury to the patient's face or mouth prohibits the use of the mouth-to-mouth method, refer to the Back-Pressure Arm-Lift Method.

Treatment

Turn patient on his back. Unless his location offers immediate danger, don't take time to move him. Don't take time to loosen his clothing or to find something to keep him warm. It's important to get air into his lungs quickly.

FIGURE 12a.—Clearing out foreign matter.

With the patient's head turned to one side, open his mouth and with your fingers clear out any foreign matter which might obstruct the air passage. Draw his tongue forward away from the back of throat. If he has false teeth, remove them.

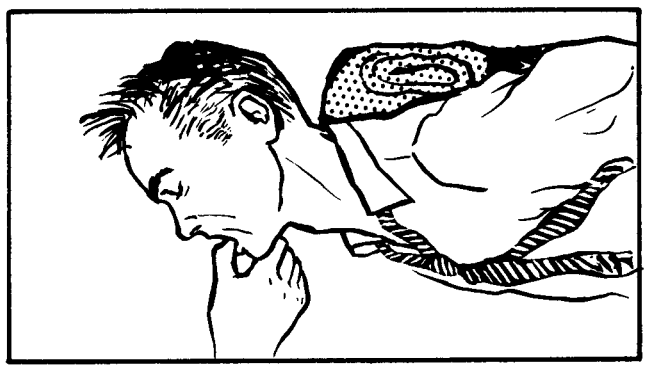

FIGURE 12b.—Lifting the jaw to open the air passage.

Tilt patient's head back so his chin points upward and lift his lower jaw from beneath so that it juts out. This moves the base of the tongue away from the back of throat so it does not block air passage. Don't allow the chin to sag. Unless the air passage is open, no amount of effort will get air into the lungs. Hold the jaw firmly in the jutting-out position.

Treatment

FIGURE 12c.—Blowing air into patient's lungs.

Open your mouth and place it tightly over the person's mouth. (If you wish to avoid direct contact, blow through a piece of gauze or a handkerchief placed over the patient's mouth. The exchange of air will not be greatly affected but don't waste valuable seconds looking for a cloth.) Pinch his nostrils shut with the other hand to prevent air from escaping.

FIGURE 12d.—Mouth-to-Nose Method.

If there is an obstruction in the mouth which cannot be quickly removed, or if there is a severe mouth injury which prevents proper contact, then the mouth to nose type respiration would be more effective. The victim's mouth is sealed with the fingers of one hand while the other hand holds the jaw in the jutting out position. Take a deep breath, place your mouth over his nose and blow forcefully until you see his chest rise. The rest of the procedure is the same as the mouth to mouth method, which follows.

Exception: With an infant or small child, place your mouth over both his nose and mouth, making an airtight seal. When you blow, do so less forcefully than you would for a larger person.

Take a deep breath and blow forcefully into his mouth until you see his chest rise. Remove your mouth from his, turn your head to the side and listen for the air being exhaled from the patient's lungs. If you hear it, you know an exchange of air has occurred. If the chest does not rise, hold the jaw up more forcefully, to open the air passage, and blow harder, making sure there is no air leakage around the mouth or nose. The jaw muscles of the patient may be so tightly clenched as to make it difficult to pull the jaw up and out into the proper position. It's possible to blow air through clenched teeth but it's better to try the mouth-to-nose technique in such a situation. If you are still not getting an exchange of air, evidenced by the expansion and contraction of the chest, check again to make sure the head is tilted well back and jaw is jutting up and out. If you still do not get results, quickly turn person over on his side and give him several sharp blows between the shoulder blades in an effort to dislodge any foreign matter which may be obstructing the air passage. When the chest rises as you blow in and you hear the air returning from the lungs you know there has been an exchange of air, then blow in the next deep breath. The first 5 or 10 breaths must be deep (except for infants and small children) and given at a rapid rate to provide oxygen rapidly. Thereafter, continue the blowing procedure at a rate of 12 to 20 times a minute. A smooth rhythm is best but split-second timing is not essential. Remove your mouth after each breath and listen for the exchange of air. In the case of an infant or small child, blow less vigorously, using shallower breaths, about 20 times a minute. *Don't force air into a child's lungs too hard or too fast,* you may injure them.

Treatment

After performing artificial respiration for a while you may notice that the patient's stomach is bulging. Air is reaching the stomach instead of the lungs. It's not dangerous but it makes inflation of the lungs more difficult. Between inflations, as you lift your head and listen for the escaping air, apply gentle pressure with your hand on the patient's stomach. Normal breathing may sometimes start up again after 15 minutes of artificial respiration. But if it doesn't you should continue with rescue breathing for at least 2 hours, alternating with other persons, if possible, so as to maintain maximum efficiency. Cases of electric shock, drug or monoxide poisoning may require artificial respiration for long periods.

The first sign of restored breathing may be a sigh, or twitching of the fingers. As the patient begins to breathe on his own, adjust your timing to his breathing. Don't fight his efforts, coordinate yours with his. Artificial respiration should be continued until regular breathing is resumed. Then you can loosen his clothing.

Treat for shock by keeping him warm and elevating his hips and legs. He should remain lying down for several hours. Give him a warm drink, such as coffee or tea. Unless there are other injuries, he may gradually return to normal activities.

Back-Pressure Arm-Lift Method

In an injury to the patient's face or mouth prohibits use of the mouth-to-mouth method, use the *Back-Pressure Arm-Lift Method.*

WHAT TO DO

Place person on his abdomen, turn head to the side with his cheek resting on his hands.

Clear mouth and throat.

Start artificial respiration.

Treatment

Use this method of artificial respiration only when mouth-to-mouth or mouth-to-nose method is impossible.

With the person stretched out in a face down position, bend his elbows, placing one hand on the other. Turn his face to one side, placing his cheek on his hands, with his chin jutting out. If there is a second person to give assistance, have him hold the chin in jutting out position. This is especially necessary if the patient is injured about the face or mouth.

Remove foreign matter from his mouth and pull the tongue forward. If his mouth is injured be especially alert for foreign matter.

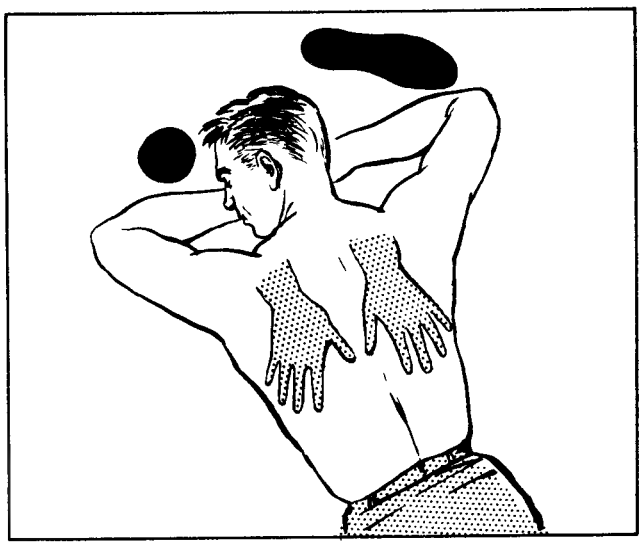

FIGURE 13a.—Diagram for position—back-pressure arm-lift method.

Kneel at the head of the person, facing him. Place your knee close to his arm and just to the side of his head. Place your opposite foot near his elbow. If it is more comfortable, kneel on both knees, one on each side of the person's head.

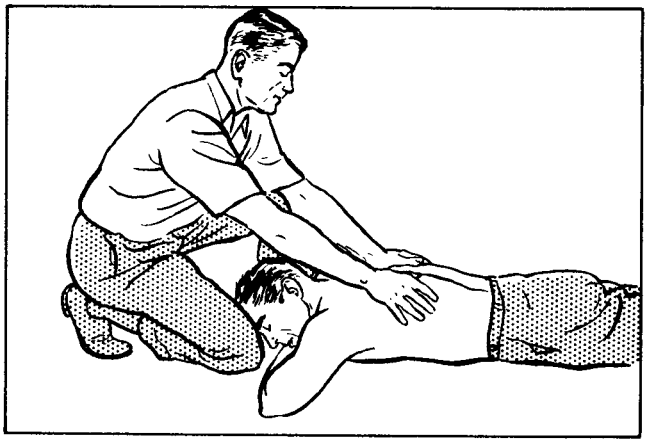

FIGURE 13b.—Step 1.

Place your hands on the flat of his back in such a way that the heels of the hands lie just below a line running between the armpits. With the tips of the thumbs just touching, spread your fingers downward and outward.

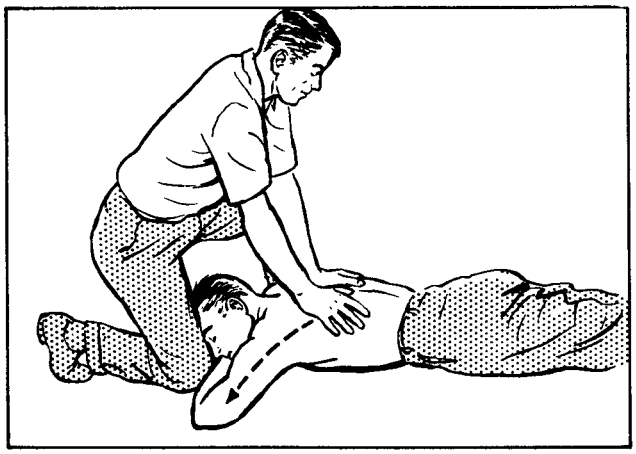

FIGURE 13c.—Step 2.

Rock forward until your arms are approximately vertical and allow the weight of the upper part of your body to exert slow, steady, even pressure downward on the person's back. This forces air out of the lungs. Do not exert sudden or too heavy pressure.

Release the pressure by "peeling" your hands from the person's back without giving any extra push with the release. Rock slowly backward gliding hands along arms and grasp person's arms with each hand, just above the elbows. Draw his arms upward and toward you. While doing this

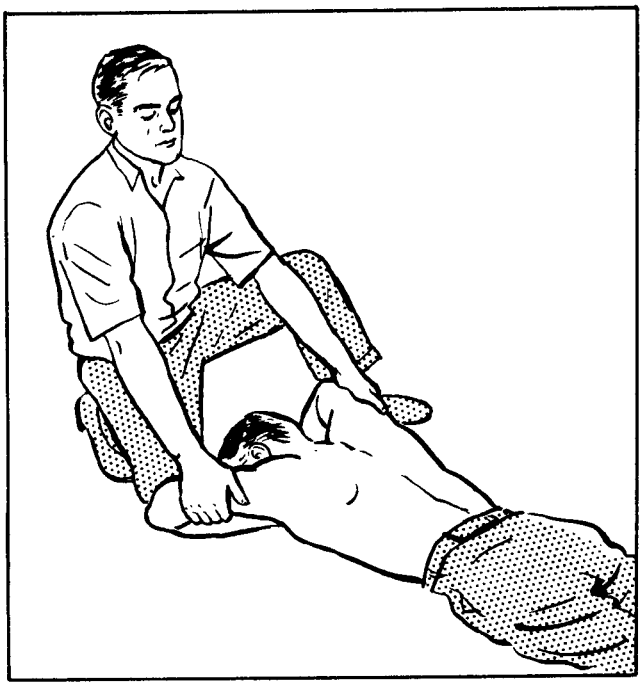

FIGURE 13d.—Step 3.

keep your arms straight. Put just enough lift on his arms to feel resistance and tension at the shoulders, but not enough to move the position of his hands. The arm lift pulls on the person's chest muscles, arches his back and relieves the weight on his chest. This action allows air to be sucked into his lungs. Gently replace his arms on the floor to complete the cycle. Now place your hands in correct position on the back and start over again. The cycle should be repeated 10-12 times a minute at a steady, uniform rate. In time with your own breathing chant, "Press . . . release . . . lift . . . release," with emphasis on the *press* and *lift* steps. Continue giving artificial respiration for at least 2 hours; longer if there are signs of life. The knee and foot may be alternated to make it less tiring for you. If another person is available, take turns with him. Be sure the rhythm is not broken in making the change.

When the patient is breathing normally, keep him warm and lying down for several hours. Give him a warm drink such as tea or coffee. The person will usually recover rapidly.

CONTENTS OF MEDICAL KITS

(April 1964)

Nomenclature	Unit Issue	Quantity	
		Kit A[1]	Kit C[2]
Acetylsalicylic Acid Tablet (Aspirin) .....500's	Bottle	1	--
Acetylsalicylic Acid Tablet (Aspirin) .....1000's	Bottle	--	3
Cascara Sagrada Tablets .....100's	Bottle	1	6
Eugenol .....1 oz.	Bottle	1	1
Eye and Nose Drops .....½ oz.	Bottle	3	18
Isopropyl Alcohol .....1 quart	Can	1	6
Kaolin and Pectin Powder .....40 grams	Bottle	3	16
Penicillin G, Tablets 250,000 Units .....100's	Bottle	2	12
Petrolatum, White .....1 pound	Can	1	3
Phenobarbital Tablets ½ grain .....500's	Bottle	1	--
Phenobarbital Tablets ½ grain .....1000's	Bottle	--	3
Soap, Surgical w/2% Hex. 1¾ oz.	Cake	6	36
Sodium Bicarbonate .....1 pound	Can	1	2
Sodium Chloride .....1 pound	Can	1	2
Sulfadiazine Tablets 7½ grain .....500's	Bottle	1	--
Sulfadiazine Tablets 7½ grain .....1000's	Bottle	--	3
Water Purification Tablets, Iodine .....50's	Bottle	2	12
Bandage, Gauze, Roller 2" x 6 yd. .....12's	Pkg.	1	6
Bandage, Muslin, 37" x 37" x 52"	Each	1	6
Cotton, Purified 1 pound	Pkg.	1	3
Pads, Gauze, Surgical 4" x 4" .....200's	Pkg.	1	6
Applicator, Wood, Cotton Tip End .....100's	Pkg.	1	6
Depressor, Tongue, Wood .....100's	Box	1	3
Forceps	Each	1	1
Pin, Safety, 1½" .....12's	Pkg.	3	12
Scissors, Pocket, Straight 4"	Each	1	3
Syringe, Fountain	Each	1	1
Thermometer	Each	1	4
Manual—Medical Care in Shelter	Each	1	1

When additional funds become available the contents of Medical Kits may be changed. However, directions for use of medical items will be available with each kit.

[1] **Kit A is stocked for 50–65 persons.**

[2] **Kit C is stocked for 300–325 persons.**

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INSTRUCTIONS FOR USE OF BASIC MEDICAL SUPPLIES

(Contained in the Medical Kit)

Antiseptic solution

Surgical soap with 2% Hexachlorophene. Washing with this soap in the ordinary manner can be used as a substitute for the use of antiseptic solution.

Aspirin (5 grain)

Acetylsalicylic Acid tablets are used for the relief of pain according to the following dosage table:

Adults—10 grains every 3 to 4 hours.

Children 5 to 12 years—5 grains every 2 to 3 hours.

Children 3 months to 5 years—1 grain per year of age.

Infants under 3 months—do not give aspirin.

Baking soda

Sodium Bicarbonate Powder can be used for:

Sore throat—as a gargle—1 teaspoon baking soda and 1 teaspoon salt (sodium chloride) to a pint of water, hot if possible.

Stomach upsets—1 teapsoon to glass of water.

For fluid replacement in the treatment of *shock, extensive burns and radiation sickness*—1 teaspoon salt, ½ teaspoon baking soda to 1 quart water.

Poisons, antidote—to neutralize acid poisoning—1 teaspoon baking soda in ¼ to ½ glass water.

Skin rashes—3 teaspoons baking soda dissolved in 1 glass water.

Cascara sagrada (4 grain)

Laxative, tablets used as follows:

Adults—1 or 2 tablets at bedtime.

Children 6-12 years—1 tablet at bedtime.

Children 2-6 years—½ tablet at bedtime.

Children under 2 years—do not give.

Eye, Ear and Nose drops

A tripurpose medicine.

Eye—1 drop.

Ear—2 to 4 drops (warm, if possible).

Nose—4 to 6 drops in each nostril.

Eugenol (1 oz.)

Toothache remedy used as follows: dampen small piece of cotton with Eugenol drops and jack into cavity of tooth. Repeat 2 or 3 times a day.

Isopropyl alcohol

Rubbing alcohol—can be used for:

Reducing fever and alcohol rubs—dilute 1 part of alcohol with 2 parts of water.

Cleaning thermometers and sterilization—dilute 3 parts of alcohol with 1 part water.

Kaolin and pectin

Diarrhea medication—4 teaspoons (½ ounce) of mixture after each bowel movement until diarrhea is controlled, but not to exceed 2 doeses an hour.

Petroleum jelly

Petrolatum, white, can be used to lubricate rectal tubes and rectal thermometer.

For care of dry, itchy skin.

Sodium Chloride

Table salt can be used for:

Sore throat—see Baking soda.

Heat illness—salt solution as tolerated, ½ teaspoon salt in ½ glass of water, every 15 minutes for 3 to 4 hours.

Eye irrigations—½ teaspoon salt to 1 pint of water.

Poisons, to induce vomiting—2 tablespoons to a glass of warm water.

Sore mouth, radiation sickness—¼ teaspoon of salt to 1 pint of water used as mouth wash.

Water Purification

Iodine tablets—10 tablets to treat 17½ gallon container of water stocked in the shelter.

INSTRUCTIONS FOR USE OF SPECIAL MEDICINES

Responsibility for use of these medicines should be reserved to the allied health worker or the selected, trained layman serving as the health officer in the absence of a physician. Improper use of these medicines in treating patients could bring about additional health problems.

Pencillin G Tablets (250,000 units per tablet)

Precautions:

Before giving penicillin, read the label and ask the person the following: Does the person have any known allergies? What are they? If he has several, do not give the medicine. Does he have a known allergy or reaction to penicillin? If so, do not give it. Instead, substitute sulfadiazine.

Instructions for Use:

If the person does not show signs of getting better with the initial treatment, then the special medicines available, of which penicillin is one, should be considered under the following circumstanes: Ask the person about previous illnesses, their frequency, if they were treated by sulfa drugs or penicillin and the duration of the illness. If the person has a history of frequent infection (illnesses) start treating him with sulfadiazine or penicillin. Choose the medicine with which he was previously treated.

Penicillin may be given to a person who has two or more of the following symptoms in addition to fever:

Fever

Temperature 103° F. or higher.

Chills

A persistent chilly sensation, particularly when followed by fever.

Pain

In the chest, particularly with coughing or breathing.

Cough

A persistent cough, a cough with mucus or a cough with blood-tinged or rusty colored mucus (sputum).

Rapid breathing

Respirations 20 per minute or more.

Rapid pulse

Rate of 90 per minute or more.

Cyanosis

Skin color has a bluish tinge on lips and finger nails.

Severe sore throat

Difficulty in swallowing and breathing.

Dose for adults

2 tablets for the first dose, then 1 tablet every 6 hours until the person is fever-free for 48 consecutive hours.

Dose for children

6-12 years—1 tablet for the first dose, then ½ tablet every 6 hours until the person is fever-free for 48 consecutive hours.

Under 6 years—½ tablet for the first dose, then ¼ tablet every 6 hours until the person is fever-free for 48 consecutive hours.

Discontinue penicillin and consider administering sulfadiazine if one or more of the following symptoms appear.

Nausea, Vomiting, Urticaria (hives), Rash, Hematuria (blood in urine), Fever (if the temperature increases or does not begin to subside after penicillin has been taken for 24 hours).

In most conditions, the penicillin can be discontinued in 7 to 10 days.

Sulfadiazine Tablet—Gr. 7½

Precautions:

Before giving sulfadiazine, read the label and ask the person the following: Does the person have any known allergies? What are they? If he has several, do not give the medi-

cine. Does he have any known allergy or reaction to sulfadiazine? If so, do not give it. Instead, substitute penicillin.

Instructions for Use:

If the person does not show signs of getting better with the initial treatment, then the special medicines available, of which sulfadiazine is one, should be considered under the following circumstances: Ask the person about previous illnesses, their frequency, if they were treated by sulfa drugs or penicillin, and the duration of the illness. If the person has a history of frequent infections (illnesses) start treating him with sulfadiazine or penicillin. Choose the medicine with which he was previously treated.

Sulfadiazine may be given to a person who has two or more of the following symptoms in addition to fever:

Fever

Temperature of 103° F. or higher.

Chills

A persistent chilly sensation, particularly when followed by fever.

Pain

In the chest, particularly with coughing or breathing.

Cough

A persistent cough, a cough with mucus or a cough with blood-tinged or rusty colored mucus (sputum).

Rapid breathing

Respirations of 20 per minute or more.

Rapid pulse

Rate of 90 per minute or more.

Cyanosis

Skin color has bluish tinge on lips and fiinger nails.

Severe sore throat

Difficulty in swallowing and breathing.

Dose for adults

6 tablets for the first dose, then 2 tablets every 4 hours until the person is fever-free for 48 consecutive hours.

Dose for children

9-12 years—4 tablets for first dose, then 1 tablet every 3 hours until the person is fever-free for 48 consecutive hours.

6-9 years—3 tablets for the first dose, then 1 tablet every 4 hours until the person is fever-free for 48 consecutive hours.

2-6 years—2 tablets for the first dose, then 1 tablet every 6 hours until the person is fever-free for 48 consecutive hours.

Under 2 years—1 tablet for the first dose, then ½ tablet every 6 hours until the person is fever-free for 48 consecutive hours.

Discontinue giving sulfadiazine and consider administering penicillin if one or more of the following symptoms appear:

Nausea, Vomiting, Urticaria (hives), Rash, Hematuria (blood in urine), Fever (if the temperature increases or does not begin to subside after sulfadiazine has been taken for 24 hours.

In most conditions, the sulfadiazine can be discontinued in 7 to 10 days.

Phenobarbital—½ Grain Tablets

Precautions:

Before giving phenobarbital, read the label and ask the person if he has one of the following diseases. If he has, and it is in an advanced stage or has severe involvement, do not give the medicine:

Advanced heart and kidney disease

Cardiac (heart) failure

Diabetes

Severe anemia

Impaired liver function or serious liver diseases.

Instructions for Use:

Phenobarbital should be used only when conservative methods have failed. It can be used with caution for the relief of symptoms of many kinds of illness. It can also be used for persons whose tensions present an emotional problem affecting other shelter occupants.

Dose for adults:

As treatment for the following.

Emotionally disturbed persons:

1 tablet given 3 or 4 times a day, 4 hours apart.

For sleep:

3 tablets given half an hour before bedtime. If person has had this medicine during the day, give only 1 tablet at bedtime.

Severe coughs acompanying a cold:

Give ½ tablet every 3 hours. Aspirin may be given at the same time for relief of fever and discomfort.

Pain:

1 tablet every 4 hours. 1 or 2 aspirin tablets may be given at the same time.

Abdominal cramps:

1 tablet 4 times a day, given every 4 hours. Sodium bicarbonate (baking soda) ½ teaspoonful may be given with it.

Convulsions:

Persons with a history of convulsions, who do not have their special medicine with them, may be given 1 tablet 4 times a day.

Severe nausea:

½ tablet every 4 hours, 4 times a day.

Dose for children:

6-12 years—½ the recommended adult dose may be given.

Under 6 years—Do not give except for severe coughing spells—¼ tablet every 6 hours.

Discontinue giving phenobarbital:

When symptoms disappear.

Except when the person has a history of convulsions, do not give the medicine for more than 5 consecutive days.

Excitability or increased nervousness after taking the drug.

Rash or any skin eruption.

Appearance of any unusual symptoms shortly after taking the medicine.

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NOTES

WHEN DISASTER STRIKES!

No one knows who, when or where disaster will strike next. Nor, for that matter, do they know just what the next major disaster will be. It could be a nuclear holocaust, a devastating earthquake, a tornado, a flood, or even a pole shift. Such a disaster will undoubtedly be responsible for many medical problems, in addition to aggravating some pre-existing ones. This manual tells how to deal with many of the more common medical emergencies that can arise among the refugees contained within a temporary shelter and was especially written for allied* health workers and selected, trained laymen, such as paramedics, etc.

** The term allied health workers in this context refers to non-medical doctors (such as dentists, veterinarians, nurses, pharmacists, etc.) who, because of their knowledge of at least one phase of health care, may be pressed into service if no doctor is available.*

DESERT PUBLICATIONS